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# develop

GAME DESIGN | CODING | ART | SOUND | BUSINESS

## Sea of Thieves

Microsoft Studios

Sea of Thieves

RARE

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For a studio to still have the freedom to evolve, focus its strengths and reshape its intentions after more than 30 years in the ever-changing games industry is an uncommon thing. But at Rare we know this world intimately and we never sit still for long.

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|---|---|---|---|
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GAME DESIGN | CODING | ART | SOUND | BUSINESS

# A LEAGUE OF ITS OWN

## RIOT GAMES TALKS GAME BALANCING, COMPANY CULTURE AND DESIGNING CHAMPIONS WITH LORE IN MIND

Art: *The Piltover Treasury* by Riot Games

SEX IN GAMES ■ OPEN DEVELOPMENT ■ THE JOY OF HDR

## AT A GLANCE

**FEBRUARY 14TH**
**Valentine's Day**
Smooching, Oysters, Bridget Jones Diary... Whatever takes your fancy

**FEBRUARY 14TH**
**For Honor**
Maybe pitting the might of historical warriors in battle will do

**FEBRUARY 28TH**
**Shrove Tuesday**
It's pancake day, yes it's pancake day. It's p,p,p,p,p,p,p,p pancake day

**MARCH 1ST**
**Horizon Zero Dawn**
Guerrilla's beautiful new post-apocalyptic adventure arrives

## DIARY DATES

**SXSW Gaming 2017**
**March 16th**
*Austin, Texas*
*sxswgaming.com*

### FEBRUARY

**White Nights Prague 2017**
February 13th, Prague, Czech Republic
*wnconf.com/*

**D.I.C.E. Summit & 20th Annual Awards**
February 21st, Mandalay Bay Convetion Centre Las Vegas, Nevada
*dicesummit.org*

**Game Connection America**
February 27th, AT&T Park, San Francisco, California
*game-connection.com*

**International Conference on Game Jams, Hackathons and Game Creation Events 2017**
February 26th, San Francisco, California
*icgj17.gameconf.org*

### MARCH

**Apps World Germany 2017**
March 15th, Berlin, Germany
*germany.apps-world.net*

**GMGC Beijing**
March 15th, Beijing, China
*en.gmgcongress.com*

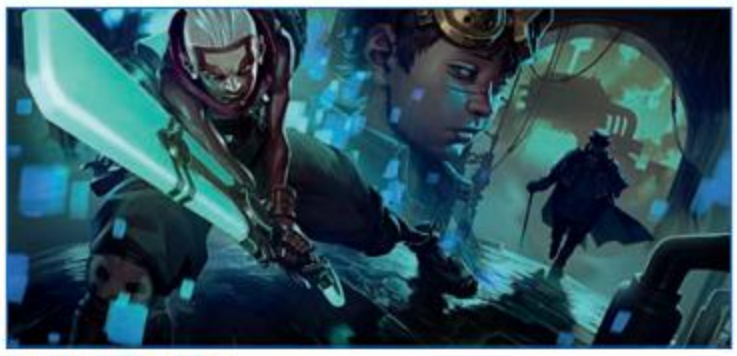
## EVENT SPOTLIGHT

**GAME DEVELOPERS CONFERENCE (GDC) 2017**
**Where:** Moscone Center, San Francisco, California, USA
**When:** February 27th - March 3rd 2017
**What:** There's still time to go to GDC. Head over to **www.gdconf.com** to register your attendance

## COMING SOON

develop 30 UNDER 30

**DEVELOP #180**
**30 UNDER 30 & THE HUMAN ISSUE**
Your submissions are in. We'll unveil the 30 people you nominated to honor their impact on the games industry



**DEVELOP #181**
**CONCEPT AND CHARACTER ART**
We'll look at the best visuals in the games industry, showcasing them from concept all the way to release

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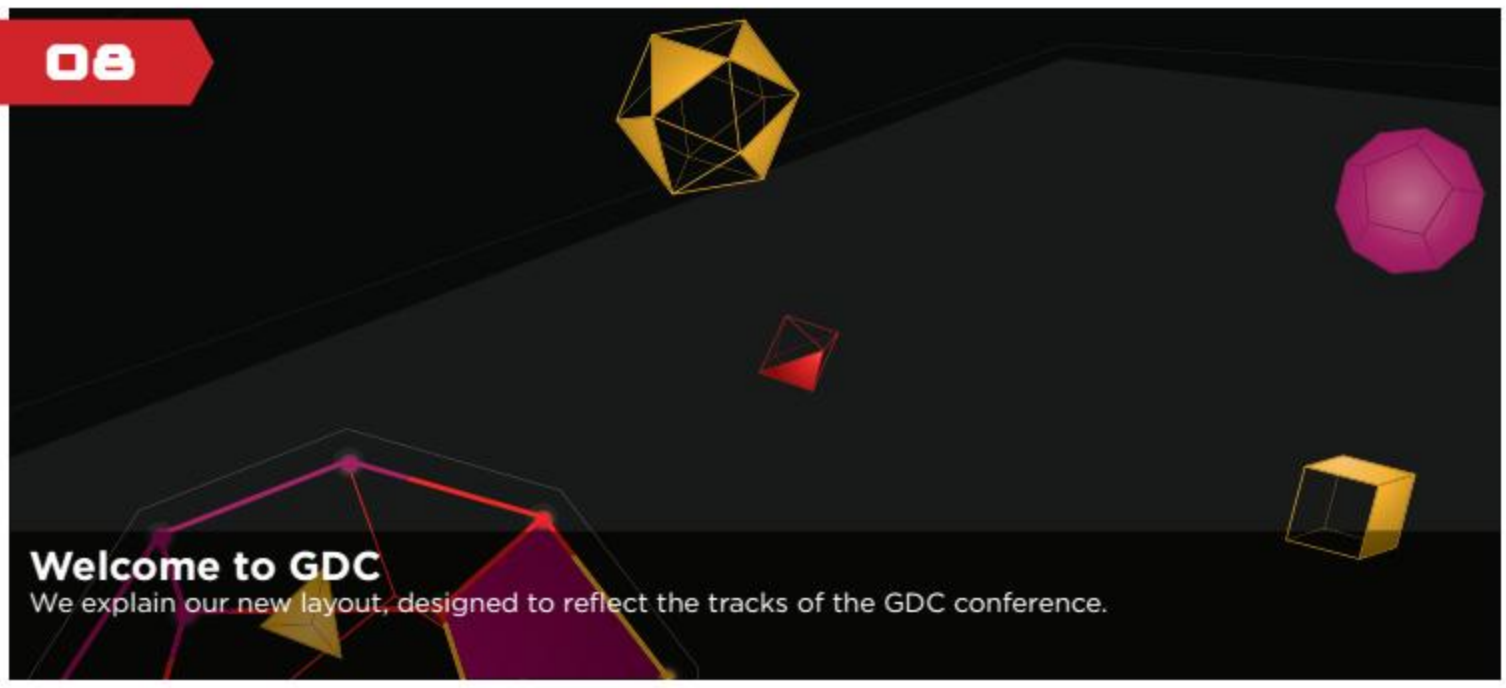

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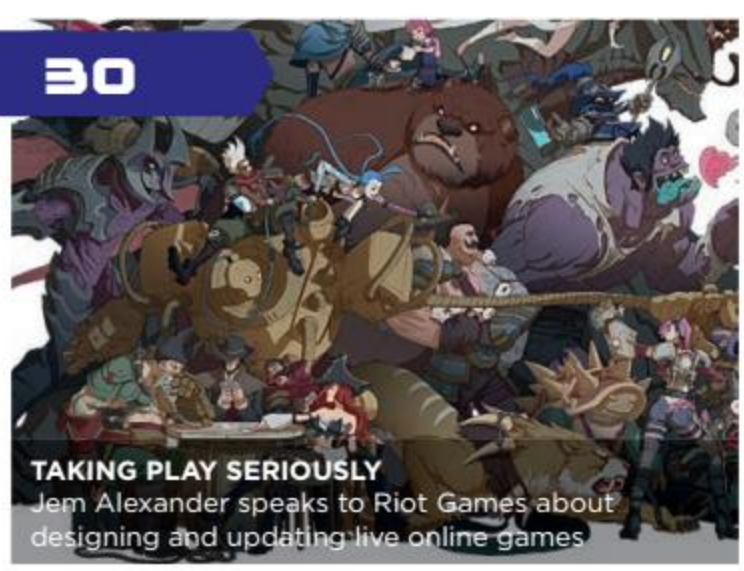

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## Editorial

### GDC IS HERE AT LAST

**This will be my first GDC. Despite ten years in the industry, this is the conference that has always eluded me. I'm excited to finally see what all the fuss is about.**

Sean and I will be at the show, as will the magazine, freely available for all attendees. If you see us, make sure to say hi – we'll be the ones looking a little bit lost and bewildered.

There are some amazing talks at the show this year, which I'm very much looking forward to checking out.

Sean and I have picked some highlights which we've dotted throughout the magazine for those of you attending.

What should make this conference even more special is the launch of the Nintendo Switch on March 3rd. Console launches are always special (yeah, even the Wii U had a Christmassy feel to it), so to be surrounded by industry creatives on that day will be tremendous fun...

...For about ten minutes before I realise I have a transatlantic flight to endure before I can get home and actually play it.

I feel obliged to mention the various goings on around the world, even though by the time you read this there's no telling what other bizarre events will have taken place.

I'm hopeful that the disgusting 'Muslim ban' won't prevent anyone from travelling to GDC to meet up, celebrate and learn together.

The games industry is easily the friendliest, most open and welcoming in the world. I'm proud of that, and I am very much looking forward to seeing everyone in San Francisco for a drink and a catch up.

**Jem Alexander**
*@jemalexander*

develop

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# FROM JAPAN WITH LOVE

Are Japanese games making a resurgence or is **Jem Alexander** just imagining it? It's been a tough decade for the region, but it feels like many developers are returning to form

Every game I have played so far this year has been developed in Japan. Isn't that great? I'm still working through my 2016 backlog, so that includes *Final Fantasy XV* and *The Last Guardian*, but chances are if you've bought a high profile game in 2017, that too was created by a Japanese developer.

In just the first month of the year we've seen the release of *Gravity Rush 2*, *Kingdom Hearts HD 2.8*, *Resident Evil VII*, *Tales of Berseria* and *Yakuza 0*. 15 year old Jem would be bouncing off the walls in excitement; 29 year old Jem feels pretty good about it too, but also world-weary and get off my lawn, etc.

Japanese games are what cemented my love of the medium, so it's fascinating to see not only a renewed interest across the industry, but to feel a reinvigorated desire for them personally. I've always loved JRPGs. Your *Final Fantasys*, *Kingdom Hearts* and *Arc The Lads*. Japanese horror like *Resi* and *Silent Hill*, too. There was a cancelled PSP horror RPG by Level-5, *Ushiro*, which was promised to marry the two genres and... *sigh*

I could spend this whole article reminiscing, but don't worry I'm about to make a point: Japanese games died, and I can remember practically the moment it happened. Around 2006, when the Xbox 360 and the PS3 were the new hotness, Japanese studios were suddenly asked to go bigger and prettier. Suddenly devs familiar with making excellent standard-def PS2 games were told to live up to someone else's HD promise. High-def gaming had arrived. 720p or over only, please.

> **Japanese games are what cemented my love of the medium**

Seemingly en masse, the entire Japanese games industry floundered. Meanwhile, the West boomed. *Call of Duty 4* happened in a very big way, and USA and EU devs were suddenly stealing Japan's crown. Then came the infamous *Final Fantasy XIII* interviews in which producer Yoshinori Kitase would tell the world that "HD towns are too hard to make".

*Final Fantasy* is actually the perfect yardstick by which to measure the demise of Japanese games. *Final Fantasy XIII*, *Versus XIII* and *Agito XIII* were all announced in 2006. They would eventually release in the West in 2010, 2015 and 2016, respectively. That's a decade of late games which, especially in the case of *XIII* and its sequels, disappointed fans who had grown up on the likes of *V*, *VII* and *X*.

During this period it was easy to fall out of love with Japanese titles. They were few and far between, and often disappointing. Microsoft had a habit of paying for exclusive JRPGs in a desperate (and ultimately futile) attempt to crack the Japanese market, leaving PlayStation fans out in the cold. Sales tumbled and it became increasingly hard to justify the cost of development, without attempting to cater directly to the western market. But for many, that's not what we want - we want unabashedly Japanese games that demonstrate their unique culture.

Recently it feels like Square Enix, along with the rest of the Japanese games industry, is getting its mojo back. More importantly, it feels like appetite for these games in the West is on the rise. *Resident Evil VII* is a great return to form for the series, people are *very* excited about *Persona 5* and *Yakuza 0* is sold out everywhere. *FFXV* was flawed, certainly, but it felt great to really enjoy playing a *Final Fantasy* game again after almost 15 years.

Sure, you can see the giant chunks of unfinished gameplay and story that the developers had to rip from the game's flesh to get it out to the waiting public in time, but it feels like the release of this game allows Square Enix to wipe away ten years of expectation and start anew. It represents a new era of Japanese games on current gen home consoles.

And there's the rub. Since the release of the Xbox 360, strong Japanese games (yes, I know the *Souls* series exists, but I only have a page here - don't @ me!) had been relegated to weaker hardware and handhelds. One of the biggest boons for Japanese games in the coming years could well be the Switch, which is already boasting a Japanophile-centric line-up. *Xenoblade Chronicles 2*, *Shin Megami Tensei*, multiple *Dragon Quests* and *Fire Emblem*. Even without all that, between *Persona 5*, *Ni No Kuni 2*, *Nier: Automata* and that *Final Fantasy VII* remake, not since the PS2 have we had so much Nihon to look forward to. ■

# IT'S **NOT FOR ME**

**Sean Cleaver** doesn't think the Switch will work for his lifestlye, and the lifestyle of many others like him, but that's not necessarily a bad thing

It goes without saying that as journalists in the games industry, we can operate with definitive finality.

For example, looking at a new console, analysing it and predicting its success, before taking a step to realise the obvious – it's not intended for us.

The problem I have is that it should totally be intended for me as a consumer. I'm a commuter in my late twenties (Third year of being 29 on the trot, right Sean? - Ed) and have the same nostalgia for Nintendo as many the 16-bit generation.

However, compared to my esteemed colleague on the page next to me and despite my incredible ability to milk a cow in *1-2-Switch* while maintaining eye contact, I'm not enthused for the Switch and have cancelled my pre-order. Not because I'm being an industry grump, but for purely adult, grown-up reasons.

## COMMUTED

Firstly, the price is not an issue, but it is out of my price range right at the start of the month and I'm sure many others agree. I don't think we expected to see the console so early after Christmas, especially with things like bills, and... bills. In all seriousness though March is fast becoming a second October, a veritable silly season of releases, and a new console just isn't that viable.

The Switch is a handheld device. I have two issues with this. When I'm at home, there's no way I'm playing it on a TV. I can, and it's cool, but my experience is going to be mostly on a sofa, whilst something else is watching TV, or in bed. The dock becomes no more than a glorified charger to me.

The other issue is that it's a bit too big for my commute. Living outside of London, I commute to work and I'm lucky if I can get a book out, let alone an electronic device this size. That's true on both overground and underground trains. The 3DS is probably the biggest size I could go if I thought about it realistically.

That's also a worry of it being in my bag, bashing around with all the lunch boxes full of health food and charging cables. It surprised me how big it is, and in a practical realistic sense, that is not going to be playable on a train, being squashed into the wall or a metal bar by the latecomers that squeeze around the fold up bicycles.

## IT IS FOR SOMEONE

The launch line up is less of an issue. One big expansive game at launch is great, especially something with the prestige of *Zelda*. The lack of communication on its virtual console, the lack of memory (32GB equals the Wii U's size) and the fact that there aren't many new titles coming soon, does make this less attractive, though.

Right now, I'm downloading episodes of Seinfeld on a streaming service (what's the *deal* with streaming service exclusivity?). They are 20 minute convenient chunks for parts of my journey where a book is too cumbersome or when I'm too tired to bother. The Switch is something I can see being like the book – a pain to others and used in too short a window to really enjoy.

I'm not down on it at all, in fact when the next run of stock arrives, I could very well be tempted. Later in the year, when I have some money. Not straight after the holiday bills. But I have to remember, this isn't for me. But it will be for someone. I hope they have a great time, and I hope Nintendo never changes in forcing us to think outside of the box. ■

# WELCOME TO THE GAME DEVELOPERS CONFERENCE 2017

**Jem Alexander** explains how the magazine's new format reflects the evolving games industry and our commitment to catering for as many developers as possible

Don't freak out, but we've moved some things around this issue. For one month only, we've adopted the Game Developers Conference track system to make it easier for you to find articles relevant to your area of expertise.

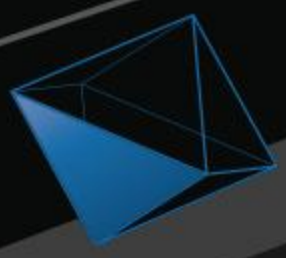
Seeing as both the editorial team and the magazine itself will be available at the show for all attendees, we thought we would take this opportunity for a bit of experimentation. If you're reading this before the show begins, that means you're probably a subscriber. In which case, thank you!

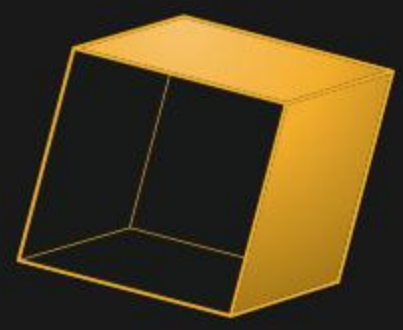
If you're reading this at the show, then this may be the first time you've read an issue of Develop. Welcome! The editorial team is still fairly new too, even though the magazine is fast approaching its 16th birthday. Which is why we're still moving the furniture around. Which brings us to the track system which splits the current issue into eight sections.

These sections are designed to support, but not replicate, the various talks, panels and tutorials that will be taking place at the Moscone Center in San Francisco this month. Think of it as a bridge between the conference and our regular monthly features.

We keep saying that our philosophy with Develop going forward is to cater to all game developers from AAA to indie and even hobbyist. That doesn't mean having an indie section of the mag, that means treating one-man teams the same as established studios with 100s of employees. Which is why you'll find the biggest games with the largest marketing budgets cosying up next to fans creating free mods for their favourite games.

The spirit of GDC is communication, learning and helping each other to make games the best they can be across the industry. It's a spirit we at Develop share and we hope that, no matter what your background in the industry might be, you have a fantastic and enlightening show. ■



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# ADVOCACY

**TOGETHER**
We talk about the travel ban and gaming's quick response
**P10**

**SUCCESS**
A look at how a developer can judge what a success is
**P13**

Advocay is one of the biggest parts of the games industry. It is the connectivty of social advocacy about our favourite games and gaming moments that helps to bring millions of people together in a shared experience.

When we look back over the years, we can identify times when gaming has helped some of the biggest issues for us as people - mental health, illness, opression. But it can also point light to our positives like scientific progress, expanding the gaming experience to new gamers, new horizons and open much needed conversations about how we can all help each other.

Over the next few pages you'll see our thoughts on the recent travel ban in the United States and gaming's quick response to help out affected developers in time for GDC. You'll also read from Dr. Dana Ruggiero about how we define success as a developer.

If you are at GDC, here are some talk picks from the conference that you might find interesting and that reflect how broad a subject advocacy is in our industry. ■

### Depression-Proof Studio Culture: A How-To for Mental Wellness

- **Russ Pitts | President, Take This, Inc.**
- **Mike Wilson | Founder, Devolver & Gambitious**
- **Alex Austin | Designer / Programmer, Cryptic Sea**

One in four employed adults in America suffer from symptoms of mental illness, and there's reason to believe that figure is higher in the games industry. Depression alone accounts for over 200 lost workdays a year, at a cost of billions of dollars in productivity. This 1-hour lecture will offer simple, effective advice on how too destigmatize mental health issues.

### Beyond Ageism: Exploring VR Games for an Older Audience

- **Bob De Schutter | Dr., Miami University**

Over 40 million US gamers are over 50 today and this number is likely to increase to over 100 million. As games become a prevalent passtime for older adults, how will VR games appeal to them? In this talk, the speaker will draw from his own and third party research with older players to discuss the technology as well as its usability and content challenges, in order to derive a set of practical design guidelines that challenge stereotypical views on the older audience.

### 'Project Discovery': Lessons From Scientific Research via 'EVE Online'

- **Attila Szantner | CEO, MMOS Sàrl**
- **Bergur Finnbogason | Senior Creative Producer, CCP**

'Project Discovery' was launched exactly one year ago during GDC. Since then it became one of the biggest citizen science efforts of 2016, generating over 20 million protein location classifications by players of 'EVE Online', and receiving worldwide recognition in high-profile scientific journals and also in the mainstream press. Come and see how your own game can contribute to science and a better world. ▶

# COMING TOGETHER

In the wake of the US immigration ban, **Sean Cleaver** looks at the response from the games industry and

On January 27th 2017, newly inaugurated President Trump issued an executive order that restricted access to the United States by suspending the visa allowances of seven, predominantly Muslim, countries for the next 90 days. Immediately, the response from the world has been one of condemnation and protest, with millions turning out around the world's cities making their voices clear.

The games industry has been as equally quick and vocal in its response, tweeting: "GDC is a global community – we're horrified by the [Muslim ban]. Of course we'll refund affected attendees, and keep fighting for inclusivity."

In response to this, several of the gaming community cancelled plans to enter the US, and to even leave, given the case by case basis that green card holders would be subjected to upon their return. 1979 Revolution developer Navid Khonsari, who is a Canadian-Iranian, has lived in the US for 17 years but now has cancelled his plans for international travel due to the executive order. "This humble position reminds me of why I made 1979 Revolution --- we must learn from history and not repeat it," he told website Polygon.

Regular contributor to Develop and game developer, Shahid Ahmad, also said he wouldn't be travelling, tweeting: "Given the current confusion, until the US position is clear, I won't be going to GDC 2017." He followed that the next day by tweeting: "I'm sure the organisers of GDC, E3, WWDC etc. are mortified that their conferences are no longer global, and held behind a Racist Curtain."

## SUPPORTING WORDS

The response to the ban has been clear. This is not right. IGDA executive director Kate Edwards told Polygon "We embrace the fact that the passion and skill for game development knows no boundaries — political, geographic, cultural, or demographic. Thus to restrict immigration on the basis of an individual's state of origin represents an ignorant knee-jerk that assumes only the worst and wrongly stereotypes the people of an entire culture".

Insomniac Games published a video of CEO Ted Price, stood in front of the entire company, saying "There is no question that these orders will harm us as a company and many of our team members. So we ask: Is this the American way? Is discriminating based on religions faith or national origin American? Absolutely not. This is a deplorable, discriminatory act that we and many others across the nation believe is patently unconstitutional. We have been, we are, and always will be a nation of immigrants."

Thankfully, people are doing something about it. Devolver Digital, just before we went to print, announced that they are going to showcase games at GDC from developers now unable to travel under the immigration ban. Renaming the Galvanize stage to 'Devolver Underground', the publisher is going to set up PCs and HTC Vive sets to demo games at their offsite location during the conference week.

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Follow
GDC is a global community - we're horrified by the #MuslimBan. Of course we'll refund affected attendees, and keep fighting for inclusivity.
Devolver Digital
@devolverdigital
Follow
If you canceled plans to demo a game at GDC due to the US immigration ban, we'd like to demo it on your behalf. gdc.devolverdigital.com

Devolver digital are offering to showcase affected developers games at GDC for them

offers some hope for worried developers

Mike Wilson, co-founder of Devolver Digital said: "One of my favourite things about games is that they are truly global in nature, transcending borders and cultural differences more seamlessly than other art forms, and working with different people from all over the world with wildly varying backgrounds has been a huge part of Devolver's success and of our personal enjoyment of what we do.

"We are happy to have the opportunity to help create a bridge in some small way for some of the talented developers who will unfortunately be unable to attend this year's GDC.

## ONE WORLD

And this is something that, in the last few hours as we assimiliate the information and the actions of the past few weeks before we go to print, that stands in my mind – togetherness.

We've been talking about Brexit in the UK for a while and wondering what leaving the European Union will do for companies that are intrinsically linked by a digital single market. How will trade deals work? How will the freedom of movement of labour be affected? At no point during all of this has any part of this industry turned their back on anyone of anything.

There's something quite stoic really in being able to say that we are all a part of an industry that, regardless of what's going on in the world, sticks together for the good of our businesses, for the good of our customers, and for the good of what we all stand for as humans that promote interconnectivity and technological progression.

And when you talk to people at shows, as I'm sure many of you reading will do at GDC and throughout the year at various events, you'll get a large sense of peoples optimism. Not that anything is going to change for the better or that anyone is going to wipe out the past eight months of political discourse and reset us to a more predictable position. But optimisim that carries itself though to what we stand for as an industry.

Yes we are mixes of businesses big and small, in different parts of development and in different parts of the world. But we all strive to create the best we can for people out there. Our words, our designs and our games have the potential to take on deep meanings and like a lot of entertainment, become a rock for those who are unable to express their oppression or feelings to the world.

Sometimes these games become important pieces of socio-political history. Some of them act as mirrors to our own values. Some of them are just bloody good fun and an escape for us all. But what they all have in common is us – the player. Regardless of who we are, where we come from and why we play, we all play.

So as I sit here typing out these words, thinking about the pain and the anger at this presidential executive order, I also know that as an industry, it is something that will only highlight how connected we all truly are, and that's a nice feeling. ■

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# ACHIEVEMENTS UNLOCKED?

Understanding what makes a game a success is complicated, especially when developers themselves struggle with defining their accomplishments. **Will Freeman** talks with Dr Dana Ruggiero to find out what defines success.

Deus Ex has since expanded in to a successful franchise

With game devevlopment technology becoming increasingly accessible, the motivations for designing games – and the rewards inherent in that process – have become much more diverse. What counts as a success in games today is evolving, multifaceted and highly personal. But understanding how experienced game designers chart their success can be helpful in setting your own game on the right course.

> **Part of the job has to be about paying the bills.**
> *Dr. Dana Ruggiero*

## IT'S COMPLICATED

Dr. Dana Ruggiero is senior lecturer in learning technology at the UK's Bath Spa University, and a specialist in the study of persuasive games.

As part of her upcoming book, Why We Design Games: Frameworks from Indie to Triple-A, Ruggiero has interviewed some 55 game designers. Through that process, she noticed a recurring theme.

"One of the questions I asked was 'how do you define success?'," Ruggiero explains. "That became its own thing, really. I didn't really think it would, to be honest. But it turned out to be very interesting, because everybody – from people just beginning to people that have had 30 years experience – kind of hemmed and hawed about it. Nobody wants to come out and say 'I do this for the money'."

Through discussions with developers including Christine Love, Brenda Romero, Warren Spector, Terry Cavanagh and Nina Freeman, Ruggiero began to notice how complex game designer's relationship with success could be.

"I think it's more multifaceted than simply being about people saying 'I'm successful' or 'I'm not successful'," Ruggiero offers. "What I found through the interviews was that people had a narrative, and every one of those narratives linked to the reasons they were game designers."

Those narratives are, perhaps, the motivations designers cite for being committed to making games. And Ruggiero has identified five broad ways designers understand their own success. A glance at those affords an opportunity to consider one's own motivations for making games.

## FIVE SCHOOLS OF SUCCESS

### 1. The One Woman Band

"Simply being able to work alone, working on your own output, or being able to work making something is the sign of success to these people. Another way of thinking about that, also, is that creating communities can be that success. By having people – other designers, basically – look at your game and understand it is a sign of success to some."

### 2. Moving Goal Posts

"These people struggle with defining success – and with recognising it when they see it. A lot of people talk about this; the idea that just completing a game doesn't mean that you're successful. [...] And the goalposts of what defines success for these people continue to move as they reach any success."

### 3. Horizon Scanners

"Many people have a sense that as game designers they should be constantly looking for new interactions and new technology, and new ways of working. For them, a way to define success was to be constantly pushing the boundaries, and working on entirely new mechanics."

### 4. The 'We Gotta Eat' Logic

"Part of the job has to be about paying the bills, and it has to be about responsibility. If you want to live in a house – and not a cardboard box or your mother's basement – then you have to be able to produce something. This is a very pragmatic definition of success. People that have been working in games a long time – and so are maybe more realistic – often have this attitude.

### 5. The Lasting Legacy.

"There's this idea that people want to be remembered for their games. They want people to look back and feel something is amazing, and was important. These people want to create something that exists for years to come; games like Doom or Mario or Journey or something like that."

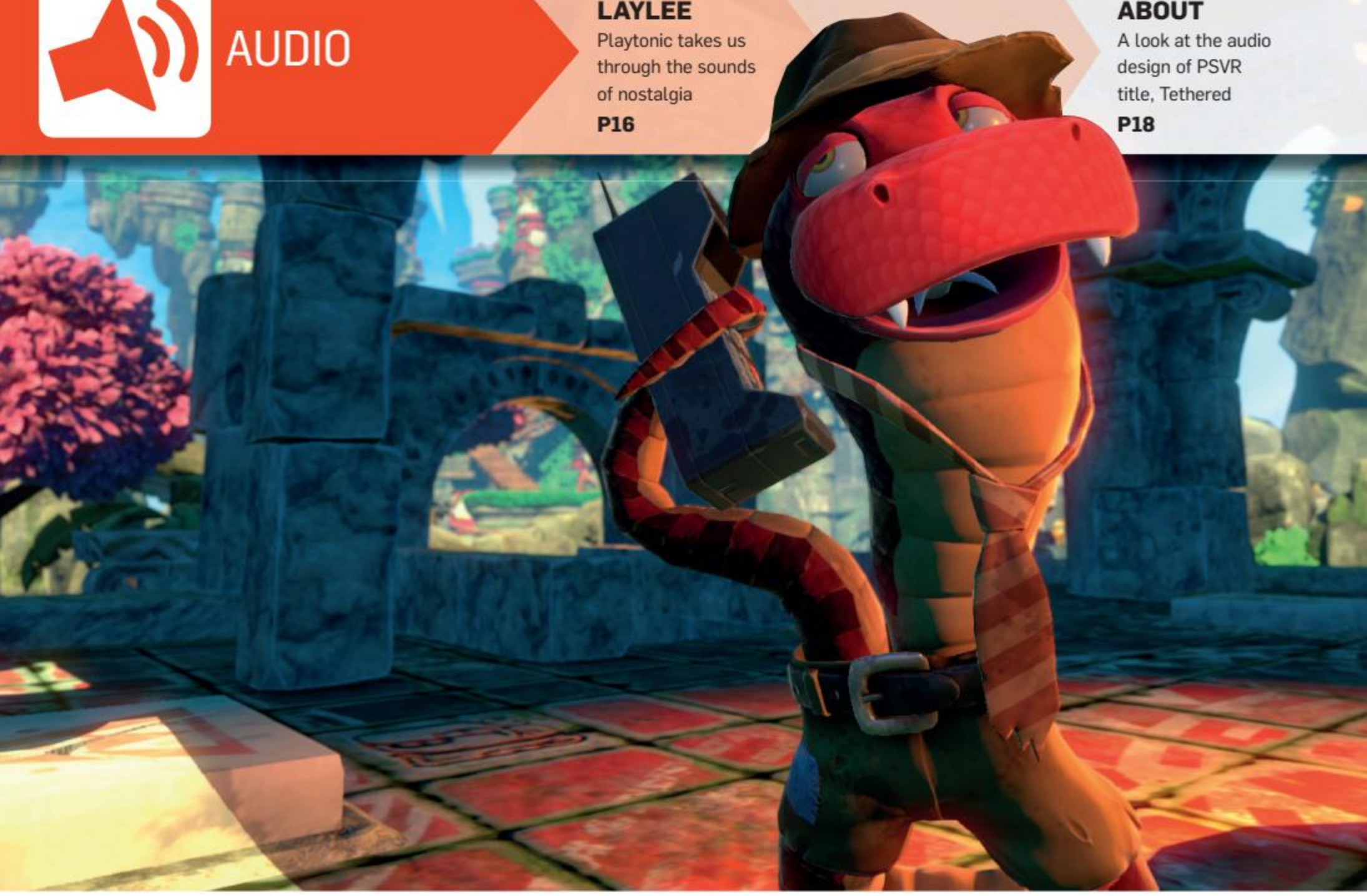
The truth is, many game designers will indentify with some – or all – of the above. Indeed, our own definitions of success change by the day and depend on the project, Ruggiero says.

The academic is delivering a presentation of her study at GDC where she will look at how the development process can impact that experience. ■

# AUDIO

**YOOKA LAYLEE**
Playtonic takes us through the sounds of nostalgia
**P16**

**HEARD ABOUT**
A look at the audio design of PSVR title, Tethered
**P18**



What a year it has been for game audio and what challenges it has brought. The large commercial release of VR has highlighted new avenues and ideas in audio design.

Music in games has had an outstanding year with so many composers and scores being celebrated. Smaller titles like *Firewatch* and *Virginia* have created amazing work with small budgets. AAA developers like iD have brought *Doom's* heavy metal action back to life, Blizzard have made amazing strides in audio design with *Overwatch* and technology continues to progress ever onward.

We'll see about that technology and how VR title Tethered looks at all VR as a first person experience. We also talk to Rebellion about designing sound for stealth in *Sniper Elite 4* and to Playtonic about recreating nostalgic sounds in their upcoming release *Yooka-Laylee*.

If you're at GDC, we hope these talks will be music to your ears with topics including VR, creature design and what's sure to be an amusing roundtable of game music composers. ■

**Composer Confessions: Massive, Often Painful, Lessons Learned**
- **Austin Wintory | Composer, Independent**
- **Grant Kirkhope | Composer, Independent**
- **Mick Gordon | Composer, Game Audio Australia**
- **Wilbert Roget | Composer, Independent**
- **Rich Vreeland | Composer, Disasterpeace**
- **Jason Graves | Composer, Independent**

In a sort of "public confessional," six veteran composers will share stories of lessons they learned in the professional trenches.

**The Sound of Horror 'Resident Evil 7: Biohazard'**
- **Kenji Kojima | Sound Programmer, Capcom Co., Ltd.**
- **Akiyuki Morimoto | Lead Composer, Capcom**
- **Ken Usami | Sound Designer, Capcom Co., Ltd.**

The audio team from *Resident Evil 7* will have a discussion about their methods to create realistic high-quality sound, and systems to implement sound assets efficiently by introducing various automated tools developed in production. The team will also discuss about how the music design achieved the horror aspect of sound design.

**Next Level Creature Sound Design**
- **David Philipp | CEO & Sound Designer, Sound Architecture Ltd.**
- **Byron Bullock | Senior Sound Designer, Creative Assembly Ltd.**

Byron Bullock and David Philipp have been working on creature sound design for the last 6 years, including high-profile titles like *Elder Scrolls Online*, *Alien Isolation* and *Total War: Warhammer*. Together they will provide insight for how to approach creature sound design, from early spotting sessions to the recording and sound design process and how to cope with the challenges along the way. ▶

# BOOM SHOT

Rebellion lead audio designer Nick D Brewer speaks quietly to **Sean Cleaver** about designing audio for stealth shooter Sniper Elite 4

I'm walking along small road, high up a hill, with a slightly broken wall masking my approach. Across the valley in front of me is a bridge that I need to traverse. On it several soldiers are patrolling the route. I have the perfect sight but the noise of my rifle will give away exactly where I am. Suddenly I hear the bellow of a large gun and the solution presents itself – fire my gun at the same time to mask the sound.

Sound is a big part of stealth, and the above example from my time playing *Sniper Elite 4* has (pun not intended) resonated with me since. So I thought I'd ask developer Rebellion and lead audio designer, Nick D Brewer, how they go about creating their audio.

"I'd never want to be that guy who imposes his design upon the rest of the department," Brewer says. "One of the things I love about our sound team is that we are very much on the same page when it comes to what we love about good game audio, and what we'd like to see in our own."

This kind of working environment is so important when sound design is an integral part of your game. "We spend probably more time on environment audio in the Sniper Elite games than anything else," Brewer says. "The stealthiest of players could spend hours crawling through a level, stopping in every nook and cranny."

"So weeks are spent building up every environment sonically. Pebble-dashing the landscape with point-sourced ambient effects: every tree rustling, every wooden bridge creaking. Scatterings of incidental wind gusts, chirping crickets, water lapping against the shore. All that coupled with our 'Audio Architecture' system, a tool which allows us to mimic the geometry of the level itself with volumes dedicated to reverbs, occlusion relationships, and other additional layers of ambient audio."

I recounted my experience playing the game to Brewer who also has memories of creating gameplay scenes like that. "It was back on *Sniper Elite V2* when that concept first got introduced, as nod to a scene in the Enemy At The Gates film, where Jude Law's character picks off German soldiers in a building one by one, timing his shots with nearby shell explosions.

> **I think gameplay design can benefit from considering audio right from the start**
> *Nick D Brewer, Rebellion*

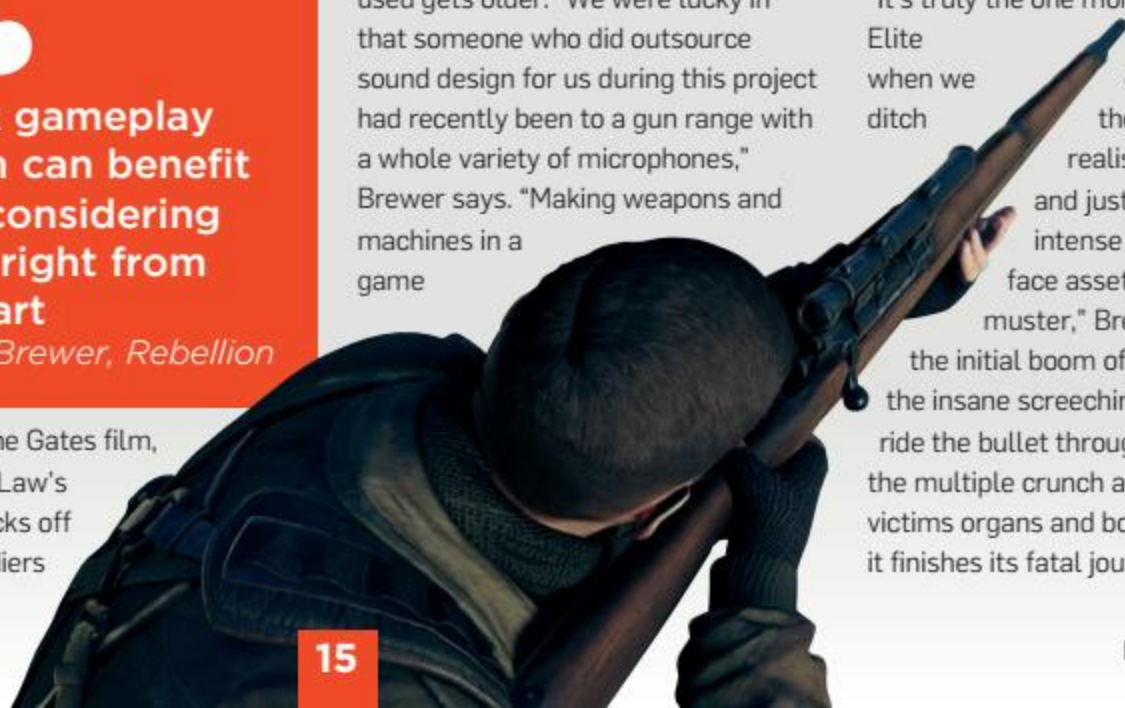
"Then along comes *Sniper Elite 3*, and now *4*, and we're suddenly moving Karl through two theatres of war that aren't seeing anywhere near as much aggressive relentless attacks from above, or noisy skirmishes on the ground – the constant exploding of nearby shells is no longer an option.

"So the dev team was challenged to re-think about this sound mask feature, in some cases even making it the focal point of the whole mission. I think gameplay design can benefit from considering audio right from the start, to the same extent it does from thinking about how it will look and feel."

Creating the correct sound for historical warfare is always going to get harder as the equipment that was used gets older. "We were lucky in that someone who did outsource sound design for us during this project had recently been to a gun range with a whole variety of microphones," Brewer says. "Making weapons and machines in a game sound authentic to their real-world counterpart isn't always fitting with what we as players have come to expect or want from our video games.

"Let's say a game you're playing has gone super authentic with its Sound Design - Level 1 got you equipped with 'Rifle A' and much later on Level 2 kits you out with 'Rifle B', and it just so happens that even though the latter weapon in reality is an upgrade in terms of damage, it actually sounds a little bit naff compared to the first one. We have to adhere to some kind of gamer anticipated hierarchy of coolness with each newly collected gun, while not straying too far from the reality of those sounds. You've got to get the right balance."

So what's Brewer's favourite sound? It has to be the X-ray kill cam. "It's truly the one moment in Sniper Elite when we can completely ditch the constraints of development realism for a while and just make the most intense OTT and in-your-face assets we can muster," Brewer says. "From the initial boom of the rifle shot, the insane screeching whoosh as we ride the bullet through the air, and the multiple crunch and splats of the victims organs and bones exploding as it finishes its fatal journey. Lovely." ■



# PLAYING TO AN AUDIENCE

How do you make sure your nostalgia-fueled game has a familiar feel, but still brings something new to the table? **Jem Alexander** speaks to the audio director and two composers on Yooka-Laylee to find out.

As a throwback to classic 90s 3D platformers, the feeling of nostalgia that *Yooka-Laylee* evokes is easily one of its key selling points. This is true of the colourful aesthetic and bouncy-jumpy gameplay – both of which have been modernised to take advantage of (yikes) 19 years of technical progress.

Musical instruments haven't changed much in that time, so the audio team has a less tricky job ahead of them when it comes to creating a similar-but-different vibe of music and sound effects for the game. This is especially true when you consider that many of the composers worked together at Rare on games like *Battletoads* and *GoldenEye 007*. So how has their approach to music changed in that time?

"I have to say it hasn't really changed at all," says Grant Kirkhope, a composer for *Yooka-Laylee* who made music for *Banjo-Kazooie* at Rare. "I still write the way I always have. I just sit down at my keyboard, load up an instrument sample and mess around until I hear something that I like.

"Back in the N64 days I had to try and squeeze as many instruments and SFX as possible, into the tiny amount of memory, using as aggressive compression as I could, without it sounding completely awful! These days I can use huge sample libraries that sound amazing as I'm usually providing a mix ready to go. It's light years ahead of where it used to be."

David Wise, another of *Yooka-Layee's* composers, who wrote music for *Donkey Kong Country*, agrees. "The main thing that has changed is the palette of sound we now have available," he says. "And the more of these we have, the more critical the decisions are when deciding what to use and how to use them. The days of a very limited sound to work with are gone, replaced by the responsibility of making sure these great instruments support the game."

The best way for the composers to support the game in this way is to play it. What a shame, eh? Luckily, David Wise lives just round the corner so can pop in any time for a play session.

> **I needed to get the pace right... And then throw in copious amounts of ukelele**
> *David Wise*

"I find it helpful to play the game myself and also to watch other people play the game," he says. "Fortunately, the internet makes developing music for games accessible from anywhere in the world with decent internet ."

This is handy, as Kirkhope and Steve Burke (another member of the audio team) live further away. Audio director Dan Murdoch says that despite this, the whole team had a visibility on the game to inspire their work.

"They had absolute access, but I'd try to help out with more documents, screenshots and info to help the workflow," Murdoch says. "The composers had remote access to the project in development, so could try out anything in editor."

So how do they make sure to keep a consistent style across the whole game? "To be honest, we often are happy to let their own styles shine through individually," he says. "The style guide is quite simple, 'write music like you did in the 90s'. We get away with this as each composer is scoring very different parts."

For Kirkhope, writing music like in the 90s means creating something that will give players the same joy they felt playing *Banjo-Kazooie*.

"My main goal is to try and write music that gives the listener a feel for what the two characters are about," says Kirkhope. "There's lots of little oddball moments in the music that I'm hoping will raise a smile. Also all the levels in the game are very different so I've had to write music that I haven't really written before. I've had a lot of fun with *Yooka-Laylee* and I'm hoping that's reflected in the music. I still get a lot of mail even now about the music in *Banjo-Kazooie* so I don't want to let anyone down!"

For David Wise, his main inspiration comes from the name of the game.

"Clearly with a name like *Yooka-Laylee*, my main choice of instrument was the ukulele. However, for the minecart tracks I needed to get the pace right to reflect the speed of the cart and pitch the music to be serious enough to focus the player's concentration. And then throw in copious amounts of ukulele!"

Murdoch insists that just having the right people working on the game is all that's necessary.

"I understand why the relaxed attitude to style may seem concerning, but we are working with composers who completely know the score... had to sneak a pun in somewhere," he says. "People have been clamouring for a spiritual successor to *Banjo Kazooie* for years. The impetus for recapturing that style of composition on *Yooka-Laylee* is coming from the composers, they want to bring it back as much as anyone. I trust them to send me tracks that bring me back to playing Rare N64 games and they have delivered. After all it's the signature sound they created that people really appreciate. It's an indulgent nostalgia trip, but I wouldn't have it any other way." ■

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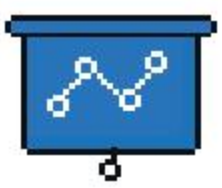

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# HEARD ABOUT: TETHERED

**John Broomhall** talks with composer and audio director Kenneth Young about creating integral aural innovations for Secret Sorcery's charming VR title

Following his celebrated work on the likes of *LittleBigPlanet* and *Tearaway*, Kenny Young relished the prospect of working with another team who also really values the role of music and audio. *Tethered* is an immersive strategy game in which you look down upon beautiful floating islands - a visual perspective immediately setting it apart from the first-person VR pack. Young: "Each VR project requires a tailored approach. There's pleasure to be had in the small details in VR, be that simply observing the world around you or examining an object up-close. The strong sense of 'presence' invites players to compare their experience to reality and so there's a magnifying glass on audio not normally present. You need to meet players' expectations to avoid bumping them out of the experience - which requires a real step-up in the finesse of the audio presentation."

You might think this wouldn't be so applicable in a third-person style 'God' game but Young points out that all VR experiences are intrinsically 'first-person', irrespective of camera position, and meeting the players' expectations just as important, even if the 'reality' presented is fantastical:

"For example, I spent a lot of time getting the exterior acoustic just right, ensuring the sense of distance and perspective of sounds emanating from the world below matched what you were seeing. Because the game always presents an exterior location from the same kind of distance, I was able to 'bake in' a nice, convincing-sounding reverb to my samples.

"Your relationship with the Peeps (the inhabitants of *Tethered*'s islands) and the emotional bond you form with them is a pillar of the experience, so making them feel like real creatures - not just cute animations and AI code - was an important role for sound. I brought them to life using my own voice (a tool I'm not scared of!) - the soundscape is filled with the subtle sounds of Peeps communicating, humming or whistling as they walk between tasks - and crying when they wallow in despair."

> **Each VR project requires a tailored approach.**
>
> *Kenneth Young*

Perhaps the most interesting aspect of *Tethered*'s musical content is the use of iconographic musical stingers to inform the player when and where key gameplay events are taking place. Alan McDermott (creative director) tasked Young with exploring using sound and music for this purpose to reduce reliance on visual user interface elements, which they felt work less well in VR, and risk pulling the player out of the experience.

"This technique worked great for us – you hear a stinger, you come to recognise what it represents, the positional audio directs you towards where it's happening and then the visuals take over. The use of 'off-screen' sound guiding the player with sound/music is relatively unexplored territory and an area where I hope to see a lot of innovation due to the specific requirements imposed by VR - although pulling this off requires true cross-disciplinary collaboration.

"Alan was formerly the audio director at Evolution Studios. Collaborating with a creative director who brings all of that deep audio insight to the table was a brilliant opportunity to push the role of audio. I also worked closely with programmer Scott Kirkland, Secret Sorcery's managing director, who hooked up all of my work and made the music system I'd prototyped in Unreal 4 more robust and scalable. That level of support, encouragement and investment from senior team members is what enabled sound and music in *Tethered* to be a central part of the player experience." ■

Young's music can be heard in similarly charming, whimsical games like *LittleBigPlanet*.

John Broomhall is a game audio specialist creating and directing music, sound and dialogue

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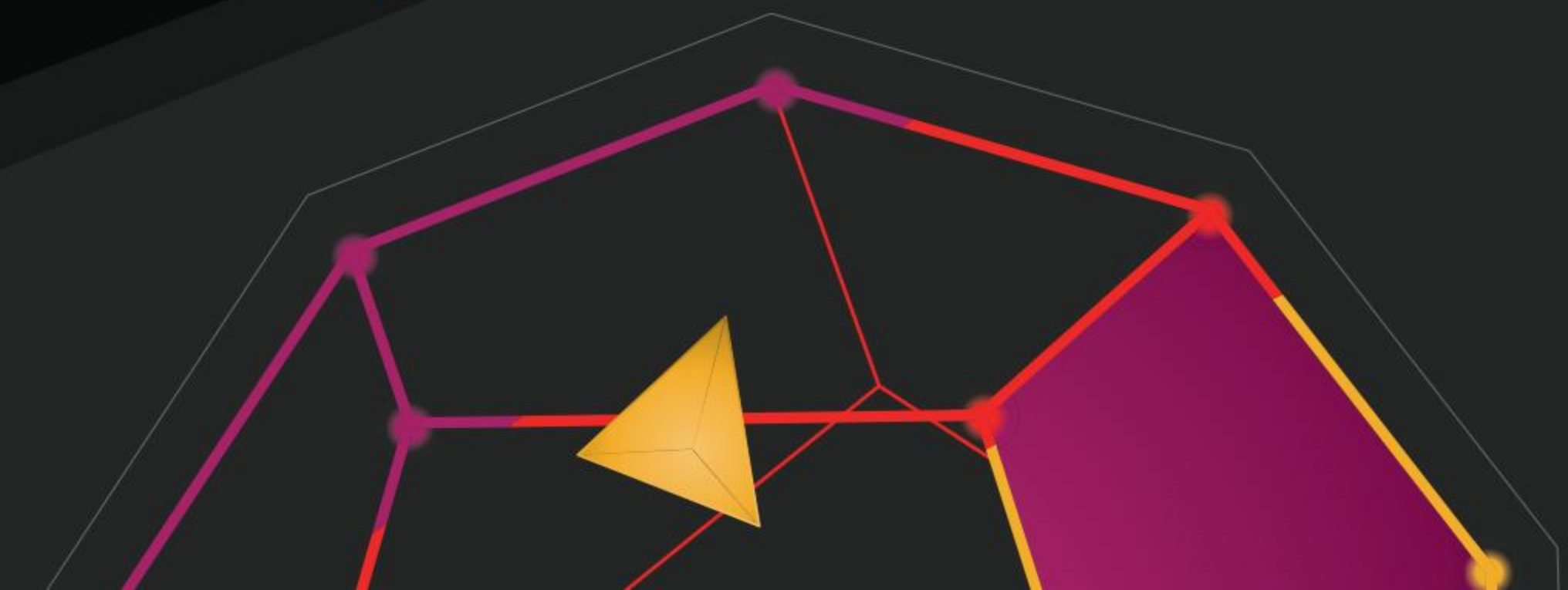

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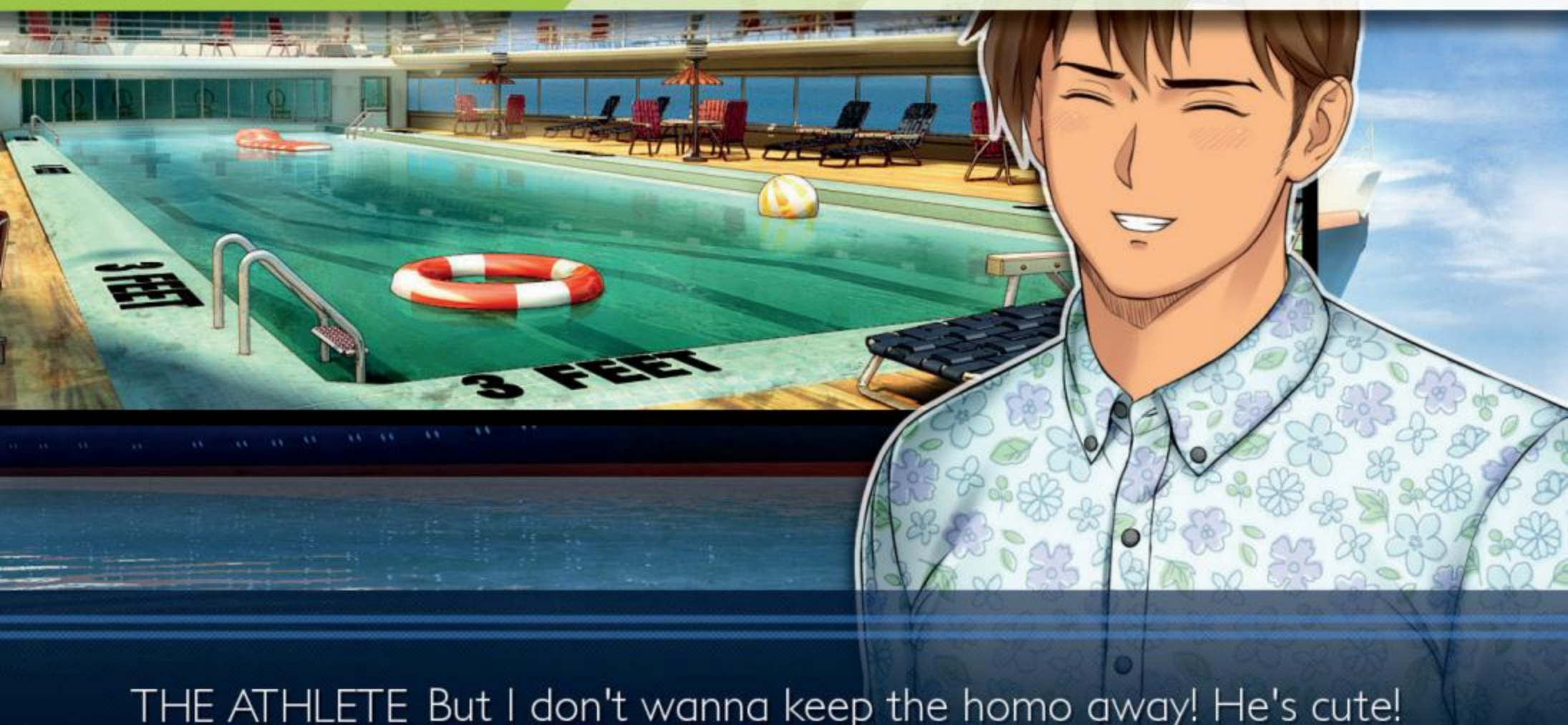
**Animation Bootcamp: The First Person Animation of 'Overwatch'**
*Matthew Boehm, Blizzard Entertainment*
VISUAL ARTS

**Cold, Hard Cache: Insomniac's Cache Simulator**
*Andreas Fredriksson, Insomniac Games*
PROGRAMMING

# BUSINESS & MARKETING

**LADYKILLER**
We look at the problem of discussing sex in video games
**P24**

**TOP TIPS**
Sold Out's eleven tips for publishing your hard work
**P26**




Video games can live and die on the marketing hype that accompanies their release. The industry thrives on expectation, which can increase potential sales or kill a title.

There are a lot of challenges in getting your game out there and for your game to find the right audience to maximise its potential. And how exactly do you choose? Is it worth releasing your game physically? How much do you need to do after launch to evolve and keep people playing you game as well as buying the new ones? Is Early Access really worth the time and effort for the financial gains it can provide?

In the next pages we'll delve into globalisation, as UK's Team17 talk about setting up offices in the US, UK publisher Sold Out give us their best tips on how to get your game published physically and we speak to Christine Love about *Ladykiller in a Bind*.

The talks we've selected look at all stages of development from Early Access, user research and innovation. We hope you find them equally inspiring. ■

**'ARK: Survival Evolved': Lessons from the Trenches of "Early Access"**

- **Jeremy Stieglitz | Lead Designer, Lead Programmer, Development Director, Co-Creative Director, Co-Founder, Studio Wildcard**
- **Jesse Rapczak | Art Director, Technical Art Director, Co-Creative Director, Co-Founder, Studio Wildcard**

This talk is intended to give valuable insight into how ARK continues to navigate uncharted business and development waters, providing other developers with tools and best practices to their own Early Access titles.

**The Anatomy of Gaming Motivations: What We Learned from 250,000 Gamers**

- **Nick Yee | Co-Founder & Analytics Lead, Quantic Foundry**

Gaming motivations vary across gamers in systematic and important ways. This is a data-driven talk based on over 250,000 gamers who have taken the Gamer Motivation Profile. Nick Yee will use new data to show how some motivations are much more volatile than others, and how these differences in volatility are related to audience coverage and risk in terms of game design.

**Innovation on Demand: Paradox Interactive's Strategic Initiatives Division**

- **Doru Apreotesei | VP Strategic Initiatives, Paradox Interactive**

The Paradox Strategic Initiatives Division was conceived as an "Innovation Lab" and "Internal Affairs" division all rolled into one. Its purpose was to encourage and enable grassroots innovation and also act as a "hub" for the development of new ideas in every area of the company's business, including product development, community management, marketing, sales and much more. ▶

# CROSSING THE POND

Team17's expansion into the US marks a milestone in the company's growth and benefits everyone from the publisher itself to the developers it represents globally. **Jem Alexander** finds out how

As one of the oldest remaining names from the early days of the UK games industry, Team17's growth in recent years contrasts starkly against a backdrop of UK studio closures. A move into the US is the latest in the company's ongoing expansion as it cements its place as a major games 'label'.

"We have entered our next step of growth," says CEO Debbie Bestwick. "Last year we had a very solid performance and achieved all our targets, as well as bringing a minority shareholder on board in LDC which allowed us to escalate our global expansion plans. Our priorities remain the same: great games for our games label, helping create sustainable businesses for our partners and to work harder on our next releases."

These plans involve the opening of a US office, which will only highlight Team17's position on the world stage. "Yes, we're a UK based company with our heritage and wider reputation in Europe, but we've been publishing games globally for years now," says Bestwick. "The US is so unique; of course there's a concentration of industry on the west coast but it's such a huge territory with dev talent clustered far and wide."

Having a physical presence on the continent allows Team17 to better integrate with the US games industry, which helps not only with signing global talent, but also allows for better communication with platform holders. "The benefits lie across many areas, from being able to be face to face more frequently with first party, commercial partners and of course development teams and just to benefit from the "radio chatter" on the ground," explains Bestwick.

Debbie feels that Team17's unique value proposition will appeal to US devs just as it has to the talent it's partnered with back home in the UK. "Our philosophy differs to anyone else who calls themselves a publisher," she says. "This is why we bill ourselves as a 'label'. It's not just a synonym for "publisher". We're developers at heart, this is how we approach the whole process.

> **We're developers at heart, this is how we approach the whole process.**
> *Debbie Bestwick, Team17 CEO*

"We collaborate with external partners to bring independent titles to market with in-house development support services on console, home computers and mobile. Our 26 years expertise as a developer allows us to offer a customisable range of services depending on what developers need from our games label. We're able to offer services such as development support, along with QA, usability testing, incubation services, community management, production, marketing, PR, lifecycle management, business support and more!

"We've always stressed we wanted to build a label that we ourselves would have been happy to partner with. We like to think what we, along with our partners, are building is a new way for partnerships to evolve and collaborate."

So why is now the right time to push forward into other continents? "It's not so much we've picked a 'right time' - it's down to the hard work, time and investment into Team17's label and setting ourselves up to succeed in an era where it's an exciting time to be independent!" says Bestwick.

"The barriers to entry have never been so low for any serious contender. There are such a variety of business models, distribution channels and even software development tools. This is what's exciting for us - creativity is flourishing in a variety of genres with games created by both 'one-man bands' and larger teams. There are so many opportunities out there, so of course we will look to continue expansion in our development, commercial operations and portfolio."

"We already work with incredibly talented developers in the US and we plan to have a major presence at GDC with our most recent US partner who has recently signed," Bestwick says. ■

# WE NEED TO TALK ABOUT SEX

Video games are one of our most interesting and engaging narrative medium, so why do business brains appear to have such a problem with portrayals of sex and relationships? **Alex Calvin** speaks to Christine Love, the developer of 'kinky lesbian sex' visual novel Ladykiller in a Bind, to get her take

Despite being a pioneering and innovative way of telling stories, video games have historically struggled with portraying sex and relationships.

There have been valiant efforts; BioWare, for example, has been pioneering in putting these aspects front and centre with its *Dragon Age* and *Mass Effect* series.

But even the way relationships are handled in these titles leaves a lot to be desired. Christine Love – the developer of 'kinky lesbian sex' visual novel, *Ladykiller in a Bind* – believes there is another way of handling these aspects.

"The biggest difference in our approach is that we want this to feel like it's all about the romance, just in terms of the way we write," she explains.

"A really common thing in games is for romance to be the result of you saying the right thing to a person, giving them the correct gift and at the end it culminates in you getting together. Then you go fuck. That's the very traditional structure; getting together is the endpoint and everything up to that is you trying to impress them. That feels weird. It's about relationship as a reward.

"The way we approach is that the characters start off having sex. The relationship starts with a hook-up and then it continues from there and you have to deal with being in a relationship, which is much more interesting space to be in. It turns out the challenges don't stop the moment two people get together. There's actually the relationship part, and that's interesting, too, and it's super under-explored."

> **The games industry hasn't had to interrogate this very much**
> *Christine Love*

## COMMUNICATION IS KEY

Love's *Ladykiller in a Bind* came out in October on Humble, but it wasn't until January that the BDSM-themed visual novel would make it to Steam.

Back in October, it was presumed by some that the title had been denied sale due to its explicit content, something that prompted The Mary Sue to write an article talking about 'Valve's erotica problem'.

There was precedent for this occurring, too, with erotic audio-visual experience *La Petite Mort* from Danish developer Lovable Hat Cult being removed from the App Store for its sexual and explicit content earlier that year.

In the case of *Ladykiller in a Bind*, however, the real reason was far more banal.

"It was a case of us wanting to make sure it was totally safe to sell," Love explains. "We didn't want there to be any concerns. It just took a while to get through to a human being at Valve. With small developers and big companies, this is often just how it is. It takes some time. But once we did get through, they were very understanding. They didn't want us to censor it all."

Censorship was something Love was concerned about before talking to Valve.

"It was a worry, but it wasn't something I was willing to do.

"The sex is really important; this is a game that's about sex. If you can censor that from your game, it probably wasn't a core part of it and, in that case, why was it there at all to begin with?"

Ultimately, the issue wasn't with the game itself, or with Valve and Steam. In fact, it's an industry problem – that in many ways, proper portrayal of sex and relationships is uncharted territory.

"In general, the games industry hasn't had to interrogate this very much," Love says.

"It just doesn't think about it. There aren't enough games that are bringing up the question so people just assume that big companies won't be okay with them, but in reality they've never had to consider it.

"With Valve, the question had never been broached, but once it was they immediately understood it."

The games industry's inexperience with sex, relationships and romance is something that will need to be addressed as developers like Love continue to explore these relatively untouched themes in games. ■

# GAMES IN ITALY

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# ELEVEN TIPS ON PUBLISHING YOUR GAME

Physical publishing is alive and well. Sold Out's Josh Garrity tells **Develop** his top eleven tips for developers looking to get their games on the shelves



In this increasingly digital landscape, many people might overlook the benefits of a physical retail release.

Sure costs can be different, the returns aren't as immediate as selling on a digital storefront and there are many more options that can bring rewards, especially in different markets.

Sold Out has been publishing games for a very long time and if anyone knows what the best advice would be for would-be physical releases, it's them.

Josh Garrity is Sold Out's digital content manager and he's got eleven tips for you on what you should do, as a developer, looking for a physical release of your game:

## 1 Time Frames

Developers can be unaware of the timings involved for physical publishing. In one conversation I had with a developer they said "We're focusing on the digital release at the moment, but we'll come back to you to focus on the physical release about two months before launch, that should be enough time." Unfortunately, physical publishing just isn't that simple. It takes six months minimum to get a game on store shelves successfully. So, if developers want to release their game physically day and date with their digital release, they need to start thinking about it and putting the gears in motion very early on. If any publisher says they can do it in two months, be prepared for a lot to go wrong. We want the best for your game, so let's work together to make sure we're prepared and have plenty of time to get everything in place.

## 2 Previous success doesn't mean you'll be successful

The video game industry is fickle. A big hit on PC does not guarantee a big hit on console. The reality is, no matter how well reviewed or how many units you sold on PC, you are now racing against the clock to release on other formats. The press and consumers will move on to other titles once their excitement for yours has faded, and it's incredibly hard to drum up that excitement again once the initial wave has subsided. We'll do our best to maintain and increase interest in your game, but you must aim to release your game on consoles as near to launch on PC as possible. Strike while the iron is hot.

## 3 The impact of last minute decisions

Last minute changes to messaging or details, no matter how small, can derail PR and marketing efforts for your game. On the development side, publishers understand that hurdles will appear and delays will happen. However, if something happens, that will affect the PR plan, we need to know well in advance. If an asset you promised to create for a press release suddenly isn't looking possible, it can derail a

Publishers don't just stick your game in a box and on shelves.

major marketing beat for your title. Without consistent messaging, you're in danger of becoming just another release on the schedule, rather than standing out about the crowd. We're here to leverage every asset and angle you have, so let's knock it out of the park.

**4 Honesty is the best policy**

Publishers need complete clarity and honesty from developers. Don't hide information, because the more informed we are, the better we're able to react. The best time, is right away, otherwise we might start making promises to retailers and consumers we can't keep based on previous information. Be honest, and publishers will do their best to help out.

**5 Focus on your skill set and bring in experts for the rest**

Nobody can guarantee anything, and the reason why we're successful, is we're driven by our development partners, and we do our best to deliver. We don't know how to code, but we do know how to help you develop your game with structures, budgets, advice on marketing, PR and a multitude of other things it takes to get a game in the hands of players. We've learned that by listening to others, and taking in as much as we can. If you tell a publisher that you'll handle all the marketing, PR, storefronts, QA, submissions and a host of other things yourself, without the experience, it's going to cause you issues. Let others advise you, and help you – because a publisher is invested in not just your game, but your success.

**6 Aim for the stars, but be prepared to reach the clouds**

Seventy five percent of games never leave early access. Most kick-starters fail. Most games on Steam only sell around 5,000 copies. As a publisher, we'll make sure none of this happens for your title, but you need to understand the world you're entering. It took Riot eight years to start printing money. Don't look at the absolute biggest hits like Mine Craft, and think to yourself that your game will sell these kinds of numbers. Games like that are the exception, and a great deal of luck lead to their huge success. Of course, we want your game to be a huge success, but it's important to have a degree of perspective and a realistic measurement of what success looks like.

> **You'd be surprised how a game designed for a certain age group or demographic can perform differently in many territories.**
> *Josh Garrity, Sold Out*

**7 Don't review your own game**

Consumers are not stupid – they'll recognise a genuine steam review versus a staff member immediately. You will always get found out. Have the confidence in your product, and your publishing partner to generate goodwill amongst players. If your game is good, the goodwill will come, and we'll be there to help you capitalise on it.

**8 Respect comes with time**

Mike Bithell is a well-liked developer, who made a very popular game. He has a following on social media, and developers want to learn from him. Trade and consumer publications will always find time to interview him. Unless you are Mike Bithell, you're unlikely to get that immediate respect, or as much affection from those you want to talk to. This level of respect has to be earned. Do the talking with your game through coordinated community, PR and marketing, and afterwards, plenty of people will want to talk to you.

**9 One territory will not make or break your game**

You'd be surprised how a game designed for a certain age group or demographic can perform differently in so many territories. America is undoubtedly your largest market, followed by EMEA, but you cannot discount what we call export territories, or APAC (Asia Pacific). We build and maintain partnerships, so all you need to do is create your game. So instead of doing everything based around PAX, think about E3, GamesCom, GameCity, Rage, Igromir and any other event where you can connect with the community. Think about international press tours, and then ask people like us to do them. The world is your oyster, embrace it.

**10 Do not bet the farm**

The videogames industry is a business. Yes, we're super creative, and some of the most emotional and vibrant entertainment products are videogames. But, you probably want to make some money on the way. Like any ordinary business, unless you've got orders coming out of your arse, do not remortgage your house to pay for development. If you're not getting investment, or the deals on offer don't pay for what you project for the budget, do not risk everything to make it happen. Be patient, and try everything. If you run out of money during development, a publisher will try and help you, but you're likely to lose some of the deal you spent so hard working on. Budget, plan, re-budget, re-plan. Take advice, and you'll be well on the way to having a solid business. You shouldn't get to the point where a project is sacrificing your well-being.

**11 Don't give up**

Sometimes, you'll hit a wall, there will be pressure, and it's likely that at some stage, you'll be working all night to get a piece of code to do what it's supposed to do. But underneath all of the hard work, the sacrifices and the strain, there is always a new game waiting to come out. If you believe in it enough, don't walk away. Make the game you've always wanted to. Believe in yourself and the game, and it will come together. ■

# DESIGN

**RIOT GAMES**
How League of Legends balances for gamers of all skill levels
**P30**

**OPEN DEV**
Edge Case Games on why they let fans help design Fractured Space
**P32**

You would think by now that the rules of game design would be locked down by now, but we keep being surprised by new ideas and fresh twists on classic formulae. While graphics and tech can make an old experience appear new, it's the experiments that broaden the range of ways for players to interact with their favourite games (and each other) which truly pushes the medium forward.

Sometimes all that is necessary is a slight wrinkle on a previous success. Sometimes it's a completely new concept entirely. Either way, games are continuing to evolve in surprising and exciting ways.

The design track is devoted to exploring best practices and new ways to keep your gameplay compelling. Over the next few pages you'll learn about a new development campus in Finland that encourages design cross-pollination. Riot Games discusses how *League of Legends*' design evolves with the players in mind and Edge Case Games talks about how fans are directly impacting the direction of *Fractured Space*. If you're at GDC, make sure to attend these hand-picked talks. ■

### Prompto's Facebook: How a Buddy-AI Auto-Snapshots Your Adventure in FFXV

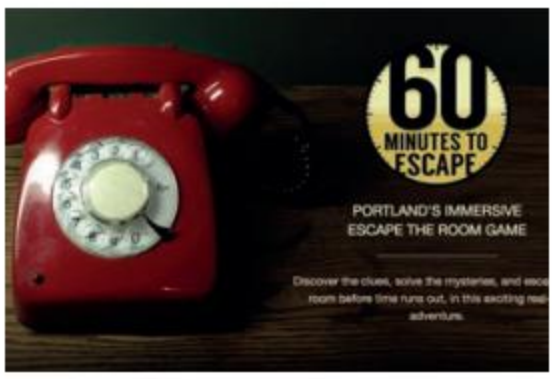
• **Prasert Prasertvithyakarn** | **Lead Game Designer, Square Enix**

In *Final Fantasy XV*, one of your camera-maniac best buddies, Prompto, will automatically take a picture of your adventure in the game for you. This new feature changes the whole user experience of *Final Fantasy XV* and is introducing the world to a new concept of gameplay sharing. This session will describe the design behind the system, through both UX and technical perspectives.

### Classic Game Postmortem: 'Deus Ex'

• **Warren Spector** | **Studio Director, OtherSide Entertainment**

Warren Spector is coming to GDC 2017 to present a Classic Game Postmortem on the pioneering game *Deus Ex*. Spector directed development of *Deus Ex*, the critically-acclaimed cyberpunk 'immersive sim' released in 2000 that achieved critical acclaim and influence over a generation of game developers. Now he's coming to GDC 2017 to recount the development of *Deus Ex*, reflect on his experience, and share key lessons learned from the project.




### Lessons from Escape Rooms: Designing for the Real World and VR

• **Laura E. Hall** | **Co-Founder, 60 Minutes to Escape**

Escape room games are wildly popular across the globe. In this session, Laura E. Hall discusses the design fundamentals and structures necessary for creating real-world experiences that offer not only entertainment, but create immersion and transportation for players, how that can be achieved with a deeper understanding of human psychology, as well as principles that may be applied to the creation of game worlds in any medium, physical or digital. ▶

# OULU RISING

Pasi Jokinen, headmaster of the Oulu Games Campus, speaks to **Sean Cleaver** about the rejuvenation of Oulu as a hub for the Scandinavian gaming community

Oulu, Finland, home of the Air Guitar world championships and F1 world champion, Keke Rosberg. More famously it was one of the homes of mobile phone manufacturer Nokia. For a long time Oulu was at the forefront of technology, housing Nokia's R&D department. That was until 2014 following Microsoft's purchase of the company. Eventually the doors were closed and the town started searching for the next thing to harness their vast workforce and technical expertise.

Enter Finnish developer Fingersoft and the Oulu Games Campus, a 5000m2 city block which is hoped will become a hub for games and for the development community across all of Northern Scandinavia. One of the campus's main aims is to revive the culture that has been lying in wait since the dissolution of Nokia three years ago. Pasi Jokinen is the Campus headmaster and spoke to me about the past few years in Finland.

"The overall ethos and the feeling in Finland has been, depressed maybe, for a couple of years. And Fingersoft definitely saw this as an opportunity to bring up the community. Give something for the community to feel good about."

Fingersoft founder Toni Fingerroos cites entrepreneurs from the town in being instrumental in his starting the company and its hit mobile game *Hill Climb Racing*. The company is keen to give back to the city, and they have by investing €3.8million in to the campus and have also moved in to the site, along with Oulu Game Lab.

It's clear that the idea isn't just for Fingersoft's benefit. "Starting over the next six months we're going to start prototyping the heck out of this thing," he tells me. "We'll take in some semi-established companies and work with them to understand how can we benefit them, what kind of help is it that they need and what kind of expertise are they missing. At the same time we have a pilot project where we want to enable individual developers to basically test out new games faster."

> **If there's another two or three successful companies in Oulu, it doesn't make competition harder.**
> *Pasi Jokinen*

## ACCELLERATING

When it comes to testing the idea is that the pool of resources can help smaller teams come in and do in six months what would normally take years – taking games from concept, to design to testing within a short space of time. This shared development is something Fingersoft sees as a benefit to them as well as the industry. "Bringing other organisations from outside into the community is very, very important.

*Hill Climb Racing 2* has launched and it's doing well and we're confident that Fingersoft development wise knows what [it's] doing," says Jokinen. "But we want to get better, a lot better. We want to do things faster and on a level beyond what we've seen before."

The competition of having many games studios in one place also seems to be a welcome one. "In general, this is a magical industry in that we don't feel that other local game companies are competitors in [the] app store," says Jokinen.

"If there's another two or three successful companies in Oulu, it doesn't make competition in the app store harder. One might argue that it makes recruiting harder, but we definitely believe that we need to create a gaming ecosystem here."

The position of the campus is great too as they hope to attract people from outside of Finland to help build these talents and expertise. "We definitely want to be the centre of a community of independent companies that work around Northern Scandinavia," says Jokinen. "In a way it makes no sense to invest in a bunch of bricks but doing it in the way we've done here kind of grabs an amount of attention that doesn't come easily and it's valuable for anyone in the gaming community in Northern Scandinavia, Finland and so on." ■

# TAKING PLAY SERIOUSLY

For live games the design process never ends. **Jem Alexander** talks to Riot Games' Design Director, Greg Street, about balancing and adding features to a game played by millions of players daily.

**Riot at GDC**
For more on this, check out Greg's GDC talk **'Balancing League of Legends for Every Player, from Bronze to Bengi'.**

Balancing a live online game like *League of Legends* is tricky. With millions of fervent fans playing on a daily basis, many of whom know the finer details of the game on an intimate level, one wrong patch can (and does) set the community ablaze.

But this shouldn't stop developers from making changes, says Greg Street, Design Director at Riot Games. It's a vital part of games like *League* and one of the reasons Riot even exists.

"When Mark and Brandon started the company, they had been playing a lot of games where they felt like it was solved and everyone knew you're supposed to play it a certain way," Street says. "Which was very frustrating, when the game has all this richness that just goes untapped. Because really there's one way to play and everyone knows what that is, and the developers aren't stepping in to fix it.

"So, from the very beginning [*League of Legends*] was a game about constantly stepping in whenever we think there's a problem. We try not to be too heavy handed, because sometimes the community rallies to the occasion and they can figure out a solution to something. But when we think that isn't happening we step in and do something about it. I think that helps prevent players from getting too frustrated. They can have some confidence that Riot probably knows that this is a problem and they're going to do something about it."

The idea of players balancing the game themselves by finding solutions to 'problems' introduced by the developer is a fascinating one. Buffing or nerfing one character might mean they see a huge rise in win-rate, but players can find a way of combatting that, either by out-playing their opponent, or by finding another undiscovered wrinkle in the latest patch which grants them an advantage.

When things get scary though, and one of the game's 100+ champions starts rampaging across the board, Riot will step in with both a short term and a long term solution.

"The way we do almost anything on *League* is that we have lots of little teams and each team owns a particular problem space," Street says. "I talk about the Live Team a lot as like the 'first responders', because we have a situation that we need to deal with *right now* and it can't wait for a long-

term overhaul of a champion. So they'll do something in the short term and we'll also have a long-term plan to fix the problem more fundamentally when we have the bandwidth and engineers and artists and all the other pieces that we need to do it right."

When patching champs, Riot wants to focus on what's interesting and fun.

"We prefer to emphasise strengths," Street explains. "So if we had to nerf a champion, we'd rather open up their weakness more, rather than taking away what's cool about them. In terms of player interest, we try to add enough to keep things fresh. That's really the reason we have new champions. It's for someone who's like 'yeah, I've played 1000 games of *League*, I kind of feel like I've seen it all'."

New and updated champions are a huge part of keeping *League of Legends* evolving.

"The nucleus of creating a new champion, or even a champion update, comes with three roles," says Street. "One is the designer, one is the artist and one is the writer. The DNA of a champion can come from any of those roles. Sometimes a designer would say 'hey, I've always wanted to make a marksman who plays in the jungle'.

"Or the writer might say 'I came up with this really cool story. Let's see if there's a way to turn it into a champion'. The artist can make a mood board where they'll take, say, a cool character from a comic book and from a movie and put them all together and say 'imagine a champion who has the mind of a serial killer'. That's kind of where Jhin came from. Obviously that goes through a ton of iteration and we have a lot of ideas that don't work out."

For new characters in *League of Legends*, mediocrity won't cut it. Riot only wants the best fictional heroes and villains to take part in their world.

"When you start at Riot, you go through this process called 'Denewb' and you learn a lot about what it's like to work on *LoL*. We brainstormed new champion ideas and my group came up with a student necromancer. The champion designers who were leading that session said 'that's a great start – being a necromancer'. But the way you would make a *League* champion is not that he's a student starting out. He's the best necromancer in the world. Maybe he doesn't have much experience, but he has huge power. That's what these champs are about. They need to be larger than life."

An important part of designing a champion for *League of Legends* is making them accessible, but also giving them the depth for high level players to really sink their teeth in.

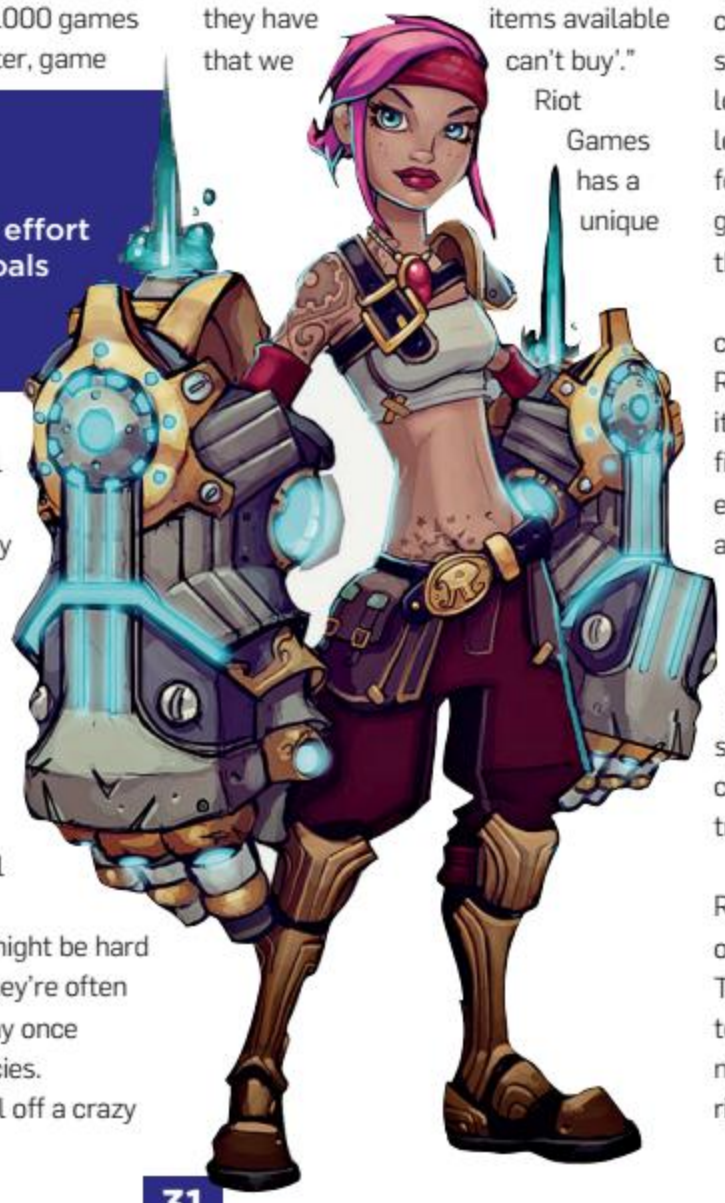
"We look at something we call the skill floor and the skill ceiling," Street explains. "Which is basically: how much better do you get at the champion over time. Before we changed Warwick, he was the easiest to master champion in *League*. By the time you'd played five games with Warwick, you were a master.

By contrast, Yasuo is almost limitless. You could play 1000 games as Yasuo and still get better, game after game after game. Ideally we have a low skill floor and a high skill ceiling but we occasionally ship a champion, I'd say Taliyah and Azir were like this, where the skill floor was also really high. You're just going to lose and lose and lose, until you've played 50 games and that's asking an awful lot of players."

> **We spend a lot of effort coming up with goals and visions**
> *Greg Street,*

Champions like these might be hard to get to grips with, but they're often the most rewarding to play once you've learnt their intricacies. Watching a pro player pull off a crazy Azir combo can be a truly aspirational. Which links in with Riot's philosophy of 'one game to rule them all'.

"We make it hard on ourselves by using a single set of numbers for everyone," says Street. "For example, if you look at a game like basketball, they will actually change the distance of the lines, depending on if you're playing at college level or pro level. We don't do that, partially because the virtuous cycle of 'I play *League*, I watch esports and then I play more *League*' is really important to us. We don't want players to say 'yeah, SKT did this amazing triple kill, but that's because they have items available that we can't buy'."



Riot Games has a unique culture. By trusting colleagues to work to a shared vision, the devs can have more plates spinning across the studio.

"The thing that works really well with Riot's company culture is the fact that we spend a lot of effort coming up with goals and visions," Street says. "Then we give individual teams a lot of autonomy to solve their own problems. That allows us to work without a lot of overhead. Someone like me doesn't have to spend all their time going from meeting to meeting to approve things. For example, we've been making a lot of complicated champions, so we have a goal now that's 'let's make some champions that are a little more straightforward to play, but still have a lot of depth and you can still have a long skill curve'. That works super well for Riot and allows us to have this gigantic dev team and still have a lot of things in production at the same time."

Another aspect of the culture is their commitment to taking play seriously. Rioters play the game daily, because it's important that everyone from finance to design understands and enjoys the company's output. It's also a great way to see the game from a player's perspective.

"Playing *League* at the office is super valuable. We'll do designer playtests at least twice a day where someone will say 'hey I have my new champion in, I changed her W. Can you try it and see what you think?'.

"But above that, you'll see people at Riot just playing *League*. Just getting on their accounts and having a game. That's super important. If you have a team that loves their product that much, they're going to want to do the right thing by it." ■

# DESIGN BY COMMITTEE

**Jem Alexander** investigates how Fractured Space developer Edge Case Games is taking advantage of open development and Early Access to improve the quality of the game

For an online game, community is pretty important. No passionate fanbase means no evangelists means stagnating player numbers.

One of the best ways to develop a community, especially for a new IP where franchise loyalty doesn't exist, is to let people in on the development of the game. That's exactly what Edge Case Games has done with *Fractured Space*, its science fiction MOBA.

By being transparent on the development of the game and inviting players to contribute to design decisions, the devs give the fans ownership of *Fractured Space*. This philosophy was born, as with so many things, from the liberal consumption of beer.

"If we go right back to the beginning of *Fractured Space*, open development started with weekly beer and pizza nights where we would invite friends of the studio in to play our prototype, give us feedback and help iterate on the core game idea," explains Chris Mehers, COO of Edge Case Games. "Once we went live on Steam Early Access this evolved, but kept the same spirit."

This evolution involved less pizza, but many more actual players. The studio hosted regular 'play with the devs' nights, which allowed them to capture player data and, in return, they promised to listen and interact.

"This involved Thursday night "play with the devs" sessions, where not only did the whole studio play the game with the community, but the creative director and others were available on Teamspeak to discuss directly with our player base, answering questions on design choices, sharing ideas on future content, or the way the game would evolve," says Mehers.

But it went even further than that. Edge Case Games shared their roadmap for the game and even its sprint planning and backlog via the team productivity tool Trello.

"On this we added a "Not In our Vision" section which was for ideas, good, sometimes great ideas, from the community that simply didn't fit with what we wanted to make," Mehers explains. Players were able to submit ideas directly to the studio's feature list. Of course, while fans might have a large amount of passion, very few would have understood the temporal and financial cost of many of their ideas.

> **We now regularly stream QA tests, where anything can and often does go wrong**
> *Chris Mehers, COO, Edge Case Games*

"It was and still is a fine line to walk, sticking to our creative vision, being conscious of the studios need to cover its costs, while also interacting with and where possible heeding the communities voice. A voice that isn't always unified around any particular issue.

"This is perhaps the hardest line to define with open development. Ultimately making the game was and is a creative exercise with hard edges, it was our game to make, according to what we believed was right/would work etc. Open development isn't simply asking your community what they want and the delivering to order. We're the games makers, making a game we believe in, we're sharing what we do, how we do it, and why we're doing it, but what we make has to be our decision."

This gets harder as the game gets more popular. It's impossible to give an ever-growing throng of players the same level of attention forever.

"The studio has now doubled in size, our game has become increasing complex as has our production pipeline, so our approach to open development has had to evolve as well," says Mehers. "You are still more likely to come across a dev playing the game on a Thursday night, but one to one discussions with the creative director are simply no longer possible. We have a three man community team that interacts directly with our player base, that allow us to keep to our open development ways while allowing the devs to focus on delivering the updates on time and on spec."

But players remain an important part of improving the game, and for that they need to be kept up to speed with its development. Enter Twitch, stage left.

"We now regularly stream QA tests, where anything can and often does go wrong, but our core community, we hope, still appreciates that we do things differently," Mehers says. "Open development isn't a marketing stance slapped on as an afterthought, it is part of our DNA. Our presence on Twitch has allowed us to scale our open development promise with regular shows answering community questions, explaining choices and letting everyone know what's going on."

## RISKY BUSINESS

Many developers might balk at the idea of telling their players all of their plans up front. If not, their PR and marketing departments certainly will. So in a situation like this, where you can't please everyone and your public plans could be scrapped and fall apart at any time, what's the upside in taking such a risk?

"The upside with the community I think was felt strongest in the early days," says Mehers. "That feeling of risk taking, doing things differently, literally engaging your player base in conversation, not via social media, or Twitch, but by actually talking to them. As we've scaled and the game nears completion, those moments feel fewer and further apart. We do however, have an incredible strong core community that have been with us on a long, and sometimes fraught journey.

"Some of the benefits have come from interesting places. When open development is part of what you do, it not only lowers the barriers between the studio and its community, it has also brought about a much flatter communication structure to the studio.

The openness extends internally not just externally, we're by no means some sort of hippy commune, but generally any question can, and often is, asked of the senior management and will be answered.

Opinions are voiced from all areas of the business, intern or lead, as a rule no one feels their creativity or input is quashed. But as with the community, there are times when we simply have to say 'no we're doing it this way', and move on."

With such a public roadmap, open development has its fair share of problems, too. Edge Case Games is, in many ways, pioneering this idea and, as such, is still feeling things out.

"A key downside has also been in how to manage "stories" for the press. When you are sharing openly with your community you have to work out what "news" you can present to attract press attention. It's something we're still working on to be honest.

"How we evolve open development in the future is a tricky question, as with everything we've done, we'll experiment and find what works, and get burned occasionally when things don't. There is no road map for this stuff, you literally just have to learn by doing."

## BE BRAVE

So you're a developer looking to make a great new online game. You're looking to build a community and let them in on the development roadmap. What advice does Mehers have for you?

"Firstly I'd say 'be sure you understand what this means to you'. What boundaries are you setting? You probably want to maintain creative control, but at the same time you have to accommodate some of what your community is telling you.

"I'd also say "Be Brave". You can't do open development without committing to it. As with us, part of your team will be terrified, especially if you've been doing work for hire or console games in the past.

"To be fair you will also find part of your team – usually the younger ones used to game jams, etc – will wonder why all games aren't made this way. Suddenly letting your fans observe the process and play your builds way before they are ready, way before you'd normally share them with anyone, will be very scary, but the terror dies down and the fun ramps up once you've built that relationship with your community."

A key part of open development is making your game available on Early Access. It's the easiest way to give your players access to the game for feedback before a v1.00 launch, and gives you an opportunity to fund development at the same time.

"Early Access gave us a platform to share our first playable, almost stable build, and open development allowed us to have a framework to deliver on a pact with our audience," Mehers says. "An exchange of ideas, an understanding of what worked and what didn't. It was a risk for sure, but so is making a game for two years in a bunker, with no idea whether anyone will really like it. We found out very early that the core concept of Fractured Space had legs, which I don't think would have been possible without Early Access.

"My advice for anyone else thinking of using Early Access: Ask yourself why? If top of the list is revenue, then think again. If it's the need for players to test ideas, to test scaling up, to build community or hone gameplay, then you are probably on the right track. I'm not saying ignore the revenue aspects, developers need to eat too, but it shouldn't be your primary reason for deciding to use Early Access." ■

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# MONETISATION

**DELTADNA**
Mark Robinson looks to the challenges of 2017

**P38**

It's great to make video games and apps, especially when they are successful and help your company's profits increase.

However, the gaming market is a competitive place, especially for mobile games. It's tough to get your app out there and to find a model that enables the best yield from your userbase.

There's many options as to how you can monetise your app or game. From free-to-play, the newer free-to-start models and in-app purchases. How you approach monetising your game however can directly effect the relationship with your users.

In the next few pages there's an column by deltaDNA discussing the year ahead and the challenges that companies may face based on the evidence of last years data. There's also a Q&A with social casino provider Kama Games about how they navigate the gaming industry and how the future of technology in mobile and social gaming can bring new challenges to monetisation.

Here are some highlights in GDC's monitisation track this year. ■

### Meet the Converged Windows Store for Windows and Xbox (Presented by Microsoft)

**• Krupa Poobala-chandran | Program Manager, Windows Universal Store**

The new converged Store is bringing the gaming expertise of Xbox together with the advanced capabilities of Windows. Using the unique capabilities of Windows, as well as the integrated promotional capabilities and deep analytics found on Windows to drive consumer conversion and monetisation, it's easier than ever to take your content to the next level.

### Crafting Promotions That Work, and How I Created One That Didn't (Presented by Amazon)

**• Mike Hines | Developer Evangelist, Appstore Developer Marketing, Amazon**

Building your game is the hard part, but not the last part. Even the best apps need a solid strategy to gain visibility and adoption. In this session, Amazon Developer Evangelist, Mike Hines, will share what he learned about creating promotions that work from appealing to influencers to the best time to launch an In-App-Purchasing sale.

### Fraud and Your Game Economy (Presented by Digital River)

**• Scott Davis | Director- Games and Entertainment, Digital River**

A never-ending concern for most game developers is fraud. From shady key reseller sites, to fraud rings that target your virtual economy, fraudsters have the potential to destroy your game. In this panel discussion, fraud experts will share the tactics you need to protect some of your most valuable assets – your game and your players.

# CASHING YOUR CHIPS

Chief marketing and commercial officer of Kama Games, Daniel Kashti, talks to **Sean Cleaver** about monetising the social casino market

If I said the word casino to you, you'd probably think that monetisation would be an inherent part of that app. But for Kama Games and their social casino apps, monetisation is a tricky issue.

"The paid model has some serious limitations when it comes to getting players to try your game," says Daniel Kashti, chief marketing and commercial officer at Kama Games. "This issue is becoming even more critical when your game exists within the crowded freemium space.

"For a freemium model to work, the game mechanics need to have 2 key elements: repeating game play and a restriction mechanism that slows down progression or prevents access to core features (game features or social features). Once you have those two elements, it makes perfect sense to introduce a monetization mechanic in the form of in-app purchase that allows a player to skip the restricting mechanic, to level up or to interact with other players in the game by spending money."

There are alsodifferences between how you design your apps to reflect the increase in interactivity. In the case of their game, *Pokerist*, real life poker has a very large social element to it. "The gameplay mechanics of poker are pretty straight forward and are - in the most part – set," Kashti says. "However, we constantly consider how the social layers of the game are embedded into the experience and enhance the game across different levels. Different features naturally cater for different player segments, and so when putting together the product road map, we balance between features that enhance the game for the advanced poker players, as well as providing more exciting options to players that are more motivated by the social aspects of the game."

The free to play gaming space, and how to monetise it, is something developers talk about at great length and there still isn't any real formula that suggests how to capitalise best from it. "It's really important to break the gaming industry scene into the different components and game types that are building it," Kashti says. "When talking about the hardcore audience (for example - console and PC players), they are typically happy to buy a premium title and avoid the game-play constraints.

"Some games are, by design, more suitable for monetisation through in-app purchases. It's important to remember that even in these games, the vast majority of the users (less than 97 per cent) will enjoy playing the game without ever spending money in it. They will however get really annoyed if you keep pushing them to take part in promotions or bombard them with ads. Like in many other cases finding the sweetspot, segmenting the user base, identifying the different motivations of users and natively integrating your monetisation mechanics (in-app purchases or ads) – really is key."

> **We do believe that players would be willing to commit to a premium game**
> *Daniel Kashti, Kama Games*

The future might come in the form of a more subscription based gaming system. "The model has proven successful for other industries," Kashti explains, "like video services such as Netflix and HBO and even the video games industry with Xbox Live and PlayStation Plus charging a monthly fee for multiplayer access and exclusive content. While the subscription model hasn't made its way into mobile gaming yet, we do believe that players would be willing to commit to a premium game or to their favourite and trusted developer."

One of the avenues that Kama Games is exploring is the use of VR and AR in their products. This could present all new challenges in monetisation, especially with the immersive nature of these mediums. "We believe that we are at the earliest stages of VR and AR," Kashti says, "and we haven't even started to scratch the surface in terms of understanding the experience that people would feel comfortable with."

Kashti is quick to warn however that the experience must always win out. "Focusing on the experience is taking priority over breaking down the monetisation aspect technology." ■

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# MONETISING IN 2017

deltaDNA CEO Mark Robinson discusses the challenges that lie ahead in 2017 for free to play monetisation.

deltaDNA CEO Mark Robinson

Last year, mobile accounted for a staggering $41m of the $91m generated by the entire games industry. Taking this huge hike in revenues into account, you'd assume that mobile game developers had game monetisation well and truly locked down. Yet for the majority effective monetisation remains as complex and elusive as ever.

When it comes to monetisation, developers' obsession with retention typically leads them to attempt to overly protect the player experience.

Evidence that developers were failing to optimise monetisation was apparent in our In-game Advertising Study 2016, which found most (52 per cent) developers were unsure how best to integrate ads within their highest grossing free to play games.

Many take a low ad frequency approach thinking players will appreciate it, but in truth, ad frequency and retention aren't linked. As a result, developers are just leaving a ton of potential ad cash on the table.

We also know that developers are being overly cautious with in-app purchases (IAP), pricing them too low to keep players engaged. So in 2017, the monetisation challenges facing developers all centre on making in-app purchases and adverts work more effectively.

## MAKING IN APP PURCHASES WORK

The key challenge to achieving a successfully monetised game from an IAP perspective is to reach an ARPDAU (average revenue per daily active user) of 10c, which conveniently equates to about $1 lifetime value. Fewer than 30 per cent of games actually manage to achieve this.

We can see several approaches that aren't being replicated by those performing less well.

Within a game, there is a very inelastic relationship between price and demand. Games that charge twice as much tend to make roughly twice as much. The minimum price point used by games that are successful, with 10c+ ARPDAU is $2.

Games can be too generous. You need a D7 retention rate of at least 10 per cent, with 10 per cent of these players being payers. You are giving too much away.

Unsuccessful games don't have enough repeat spending. When fewer than 2 per cent of all players spend any money, it can become the all-consuming focus to get them to spend something, anything. But successful games develop a spending cycle within the game loop. Games that achieve 10c+ ARPDAU have an average of at least three spends per paying player.

> **Recent research shows that ad frequency actually has no effect on retention.**
> *Mark Robinson, deltaDNA*

You also need to have a minimum of 5 per cent of spenders being Whales – players who pay more than $100/month. Only 16 per cent of games achieve all these measures.

| PLATFORM | KPI | NO ADS | INTERSTITIALS | REWARDED |
|---|---|---|---|---|
| | D1 | 31% | 44% | 39% |
| | D7 | 9% | 16% | 14% |
| | D30 | 3% | 5% | 5% |
| | ARPDAU | $0.08 | $0.03 | $0.05 |
| | DAILY %CVR | 0.9% | 0.5% | 0.7% |
| | D1 | 33% | 40% | 39% |
| | D7 | 11% | 15% | 16% |
| | D30 | 4% | 6% | 8% |
| | ARPDAU | $0.18 | $0.04 | $0.09 |
| | DAILY %CVR | 1.2% | 0.5% | 0.8% |

## MAKING IN GAME ADS WORK

With fewer than 2 per cent of players spending money on IAP, ads represent the logical choice for developers looking to monetise the remaining player base. However, ad monetisation isn't working for most games as the majority of developers don't have the technology to integrate performance data from the ad networks with player behaviour analytics, so they have no idea how ads impact player enjoyment.

In a bid to protect retention, most developers take an ultra-cautious approach to setting ad frequency. Recent research from the University of San Francisco shows that ad frequency actually has no effect on retention. Showing some ads can still be worse than showing no ads at all, because advertising can cannibalize hard won IAP revenues.

Many developers are losing money, some up to 75 per cent or more of their IAP revenue by running ads, compared to not running them.

The prevailing approach to advertising as a bolt-on isn't working, but to unlock its potential, developers need to take back control of their entire in-game data, and treat it just like any other game mechanic.

Developers also lose money by not optimising their ad network mediation. The challenge here is in cascading, so that the highest eCPM (effective cost per mille) ad is served to each player. Sophistication employed in the industry ranges from a single network, to a static cascade of networks to optimise fill-rate. Further sophistication involves actively managing the cascade, so that the best performing ad networks are regularly placed at the top of the stack, but as there is such a wide diversity between ad network performance in different situations, the ideal scenario is allocating a cascade to each player based on their territory and device.

The problem most developers still face is their inability to analyse. The natural tendency is to be cautious and overly generous. The reality is that this doesn't pay the bills. You can have sub-standard monetisation in a good game, but you can't have successful monetisation in a sub-standard game, so you might as well go for it. ■

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# PRODUCTION AND TEAM MANAGEMENT

**CREATE BY NUMBERS**
How science can guide the creative process
**P42**

Production can be a thankless role within any development team, but without solid producers games might never make it to market.

This is especially true for large AAA teams of developers who may or may not even be in the same country.

Solid team management, version tracking and coordinating across departments could mean the difference between a profitable, timely launch and an expensive delay.

In this section you will find a great article about how scientific methods can be used in a creative environment. We can already hear you artists rolling your eyes at the very concept, but check it out and you may be surprised. This article is relevant for one-man outfits all the way up to global studios.

We've also curated a collection of production-related GDC talks that we think look pretty interesting. From embedded QA to full production frameworks and better player management. Slide your gaze a few inches to the right for the full deets. ■

### BioWare Embedded QA: Your Support Class

• **Barbara Klimek | Quality Assurance Team Lead, BioWare**

A game development team is a lot like a party running a dungeon. You've got your production tank, your DPS devs, but what about your support class? Embedded QA are fully geared up members of the team ready to provide buffs and monitor the party's health. BioWare QA has invested in its internal QA analysts, embedding them directly in the teams they support. It is an ongoing process and BioWare would like to share it with other teams looking to make more out of their QA.

### Creating League of Legends Champions: Our Production Framework Revealed

• **Jeremy Lee | Senior Development Manager, Riot Games**

The team at Riot would like to share with you the creative tools and production framework they've developed. These support them in creating resonant characters for players and have reduced their development team's pain along the way. They'll share specific examples from one of their recent champion productions as well as the big "aha!" moments they've gathered over the years.

### Players Are People Too

• **Jacob Van Rooyen | Senior Producer, Big Viking Games**

Game makers too frequently forget the importance of treating their players like people. More often than not, companies will take a dispassionate, almost clinical approach to players that treats them only as numbers, and means to an end. This harms game developers not only as individuals, but as an industry. In this one hour presentation, Jacob discusses the importance of creating a relationship with players. ▶

# A PRODUCT OF SCIENCE

How can a logic that guides factory line production help game creators? Developer and producer Justin Fischer is working on an answer that could give your studio more time to create...

Video games are works of both art and science. It's the famous dichotomy that is so fundamental to what games are, and how they are made.

But the onus on where science fits into games design is often placed on what lurks beneath the art: the code, physics and AI.

To game designer, producer, consultant and scrum master Justin Fischer, the focus on science's contribution to games shouldn't stop within developers' workstations. He sees a way to apply the scientific method to the process of making games, and the structuring of studios, with a view to freeing up creativity.

More specifically, Fischer has identified the potential of the discipline of 'operations science' to game development processes and pipelines; something he'll address for his GDC session this month.

Operations science – also known as 'decision science' – emerged from efforts to make physical manufacturing more efficient. Fischer believes it is equally applicable to crafting digital game assets as it is to mass-producing tins of tomato soup and car doors.

To understand how that might work, let's start with the fundamentals of any production process.

"Any activity you ever do falls along some spectrum," Fischer explains. "At one extreme end of that spectrum you have pure process. Take boiling water. There's no mystery. You heat water, and it boils. At the other extreme of the spectrum is pure discovery."

> **If you're disciplined in your activites and processes, you'll have a lot more freedom**
> *Justin Fischer*

Pure discovery, in this context, is an act of production that is equally a learning experience, where everything is new. There, established processes do not yet exist. "The first ever time you make pasta? That's pure discovery," Fischer offers. "The hundreds of following times you make pasta? It's a process, and a pretty pure process."

## GUIDED WITH SCIENCE

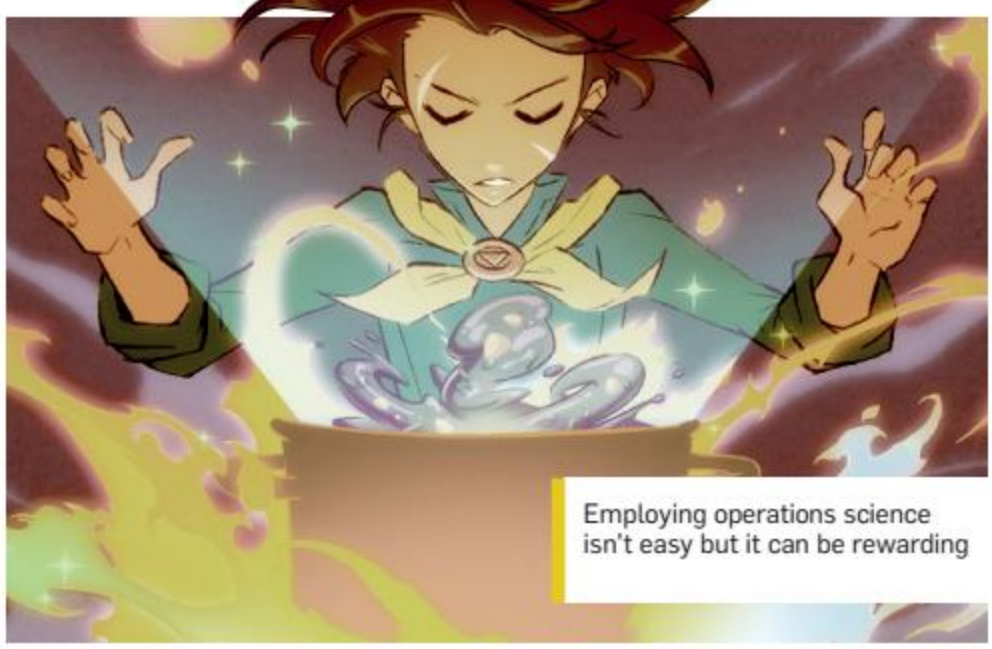
So where does developing games sit on that spectrum? It's certainly a more complex process than boiling a kettle.

"When we talk about game development, it's not a homogenous blob of activities," Fischer confirms. "There's creative elements that are really discovery on the spectrum, and there's process elements that are more managed. And nothing there is really pure process or pure discovery. There's computer science in there, for example, that is very much a process, but also discovery, as far as finding objects and classes and operations that work, and so on."

Feature development too, Fischer asserts, is a matter of discovery and process in tandem. If a creative director assigns an engineer to a feature, that structuring is a process. The journey to a functioning feature by that engineer? Much more of a discovery-led endeavour.

The core concept of operations science, then, is making process as efficient as possible, to allow discovery – arguably the creative aspect of games design – to flourish. While many point to design by data as a means to restrict creativity, operations science provides a foundation on which to create.

"The point of applying operations science here is not to try and turn creativity and discovery into process," Fischer says. "The point is to take those things that are process – those things that we know how to do – and streamline them and make them as efficient and effective as possible."



Employing operations science isn't easy but it can be rewarding

## LEAN ON THE FAMILIAR

Embracing operations science in a studio isn't something to be rushed. It is, Fischer says, roughly comparable to the Lean approach, and as with such methods, installing it will mean a modest revolution on your workflows, pipelines and studio structure.

Fischer believes any studio of any size can dip its toe in the waters of operations science without needing to commit. Because operations science is as much a mindset as a system. So all it really takes is a careful look at your processes.

"Imagine you are coming up on alpha. You're trying to get as much content as you can in the game, and trying to make it as good as possible. That's something every game developer does. So you're fighting against time, and you want to include a feature you feel is really good, or update a level. Suddenly, your build crashes, and it's red alert. Everyone has to drop everything and work out why the build is broken. You've lost 24 or 48 hours of potential dev time, and nobody can work."

Applying operations science in advance, Fischer says, would mitigate such circumstances, or at least make the fix a more rapid process.

"All you are really doing with this approach is eliminating waste from the things you can control."

But having a framework of what operations science is in advance will make testing the method's fit for your studio rather simpler than just turning up to work with a vague sense of a new mindset.

"You can start small. A simple exercise is to take something called 'Little's Law', break out a pipeline for some process like character or level design, and apply the law," Fischer states, referring to an equation originally coined to forecast retail store footfall. Fischer's blog Breaking the Wheel has a bounty of information.

"See what results you get," he continues. "At GDC I'll talk about capacity charts. A simple capacity chart will take you half-an-hour to write up, and you can see how it might impact your process. Or, in terms of your overall process, just find a pain point. Find something that hurts your team. Identify a change you can make, and an objective measurement. Then you can work on a problem. It's as simple as that. That is operations science."

## A SIMPLE SCIENCE

That core simplicity, Fischer believes, is why the method he has appropriated for games is well within reach of those smaller teams. Indeed, fellow Chicago native Trinket Studios is, Fischer says,

> **The first ever time you make pasta? That's pure discovery**
> *Justin Fischer*

employing operations science in its own way for in-development game *Battle Chef Brigade*. The team built an automated crash reporter, pushing a log and save point from player to studio.

Trinket had identified that troublesome part of their pipeline, found its objectively measurable element, and invested the time to correct it.

That did mean time away from the game, but Fischer highlights that as an important part of operations science, and for good reason.

"This stuff will take time, but it will save you time down the road. Those little ways to invest in discipline will accrue lots of time for your game." Arguably, that kind of approach is something developers have always upheld. Fischer himself looks back to a former position at Wideload Games, where he and a team toiled on mobile game Avengers Initiative.

There they built an auto-playing function, which would play the game in isolation without human input, guiding the team to bugs and pinch points without needing a member of the team hunched over their work-in-progress.

Fischer might not have used the term at the time, but that alone was an act from the mindset of operations science.

Now, some years on, Fischer is working to structure and define what games production operations science can be, and what it takes.

Which brings us to discipline, something Fischer believes is fundamental to implementing operations science into game development pipelines.

"If you're disciplined in your activities and processes, you'll have a lot more freedom, and ability to respond to change.

"For an indie studio that feels swamped, and it feels like there's going to be trouble making ends meet – well, I get it and I've seen it and I've been there. And the first question to ask yourself is 'how can we install more discipline in our process?'.

That can mean being disciplined around the frequency of scrum calls, or investing time to make sure version management is fluid, or simply building that crash report tool.

A more nuanced, intricate and sweeping level of operations science is there to be applied. And here the surface has merely been scratched. ■

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# PROGRAMMING

**INKLE**
How one dev studio seeks to change the way stories are integrated into games
**P46**

**BAFTA**
The Young Game Designers competition and getting in to games
**P51**

Code is the DNA of your game. Even with the best artists in the world, the most talented game designers and world-renowned storyteller, without a programmer there is no game.

Programming touches every part of a game eventually, so efficiency, integration and clarity are key. Especially when working in a team.

In this section you'll find a few articles which discuss the art of coding. Discover how Ragnar Svensson and Christian Murray spent ten years creating the Defold engine, now owned by developer King, and how they support the indie community with free access and updates.

We also have a look at the BAFTA Young Game Designers competition, which asks 10 - 18 year olds in the UK to not only design a game, but to code it themselves.

Elsewhere, developer inkle talks to us about its new story-focused development strategy and Creative Assembly chats *Halo Wars 2*.

On this very page you'll also find our picks of GDC's programming sessions. ■

### Creating a Tools Pipeline for 'Horizon: Zero Dawn'

• **Dan Sumaili | Senior Tools Programmer, Guerrilla Games**
• **Sander Van der Steen | Principal Tools Programmer, Guerrilla Games**

With *Horizon: Zero Dawn*, Guerilla Games has transitioned from linear tactical first person shooters to a vibrant open world RPG, while completely rebuilding its tools pipeline from scratch. In this session, Dan and Sander will explain how Guerrilla Games defined and implemented a framework that would provide a robust basis of functionality, on which they built an integrated game development environment.

### Creation of Planet-Scale Shared Augmented Realities: 'Pokémon GO' and 'Ingress'

• **Edward Wu | Director, Software Engineering, Niantic**

The ubiquity of mobile phones coupled with the availability of scalable databases and cloud infrastructure has enabled Niantic to create coherent augmented realities for millions of users in a consistent experience overlaid on top of the real world, first on *Ingress* and then on *Pokémon GO*. This talk will discuss the challenges of operating a planet-scale service in the face of usage 50x planned capacity.

### Networking Scripted Weapons and Abilities in 'Overwatch'

• **Dan Reed | Senior Software Engineer II, Blizzard Entertainment**

*Overwatch* uses a proprietary visual scripting language called Statescript to execute the high-level state machines used in the game, including the logic driving hero weapons and abilities. This talk describes the features of the language and why they were chosen. A variety of networking topics are discussed in this talk, including responsiveness, security, bandwidth usage, seamlessness, and ease of implementation. Statescript addresses each of these concerns. ▶

# IN THE BEGINNING THERE WAS A STORY

80 Days developer inkle has always focused on games experienced through stories. **Will Freeman** investigates how inkle is taking its work with narrative design one stage further with its next release

Inkle is a studio founded on the notion that players should be involved in every beat of a game's story.

From the team's most famed work in mobile narrative adventure *80 Days*, to its fantasy epic *Sorcery!*, inkle's games excel through letting the player participate actively in their narratives.

That's not set to change, but the way inkle is building story-driven games is undergoing a considered shift, at least for its next release. Where *80 Days* and *Sorcery!* focused on text-based gameplay, the as-yet-unnamed new title moves boldly into three-dimensions, offering a tantalising way for players to toy with narrative and plot.

It's giving the team a chance to reconsider how stories can be built into games. Or more accurately, how games can be built from stories.

"This is our first truly 3D game," says inkle's co-founder and art and code director Joseph Humfrey, on introducing the concept of the coming release. "*Sorcery!* may have had subtle 3D effects on the map, and *80 Days* had a 3D globe, but beyond that, there wasn't really any fine-grained

exploration of a truly 3D environment," he continues.

Ink is inkle's own open source scripting language, powering both *80 Days* and *Sorcery!*, and currently available to other developers.

The team believes the platform has the power to truly push the boundaries of what is expected from a story in the game development process.

## NARRATIVES WITH SHAPE

The new game from inkle spans three dimensions and will be much more committed to that space than any previous releases from the studio.

> **The script-first approach is our core development philosophy.**
> *Joseph Humfrey, inkle*

"Shifting the perspective changes everything," offers Jon Ingold, narrative director at inkle. "The player is suddenly inside the world. It's all around them, all of the time. That means the world-building and description is moved out of text, but the action is as well."

And there is the distinction. Inkle's in-development creation doesn't simply place a text adventure within a 3D framework; that would be just another adventure game. Instead, it attempts to bring dialog and stage direction into game design in a way quite distinct from narrative games that have come before it.

"The prose style of our previous games allowed us incredible range – from inside a character's heads, to piloting a rocket to the moon. Now everything in the story has to be something we can build, and something we can frame with a camera, and something which the player can interact with," explains Ingold. "For the first time, we are bridging uncanny valleys on a daily

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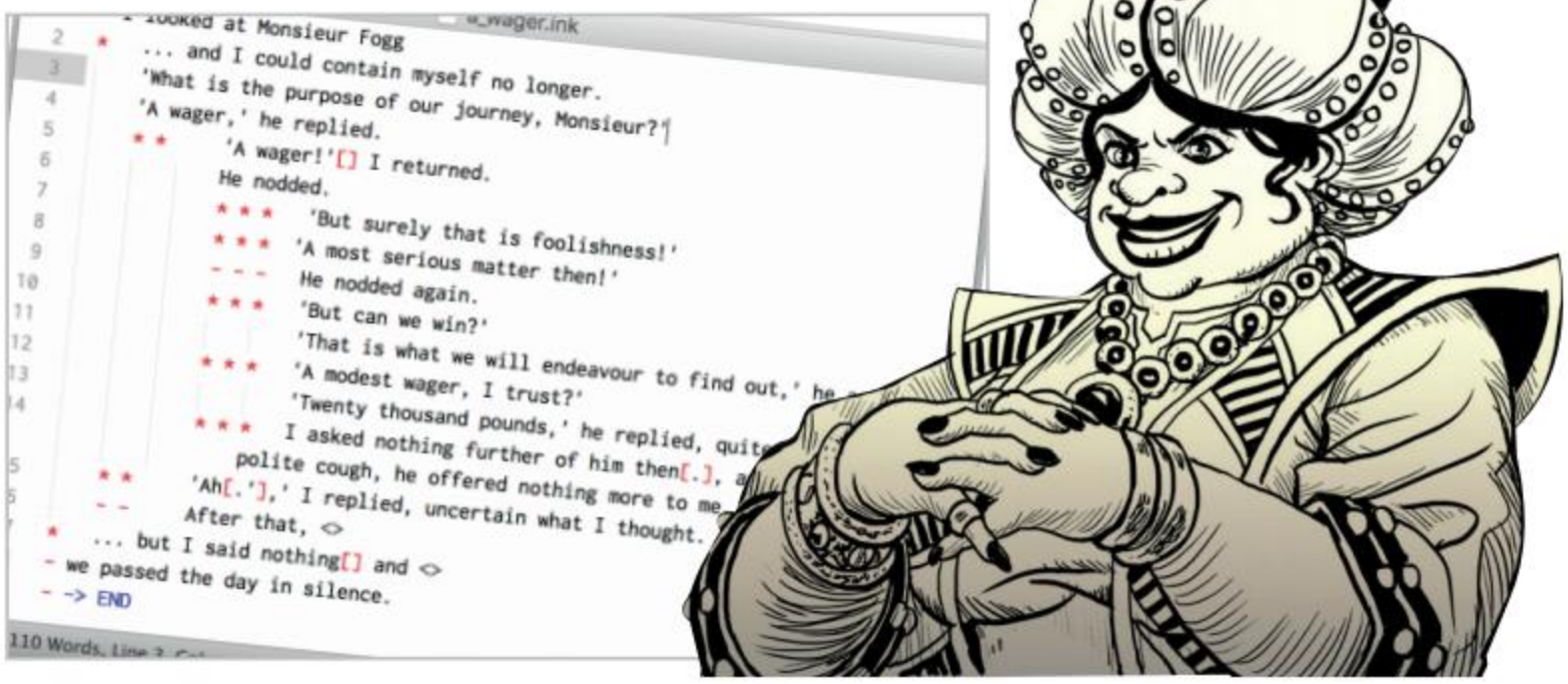
basis. But it also means every moment is more real. The game can be more beautiful, easier to sink into and lose yourself within."

"The philosophy and technology behind the writing is the same - we are still using ink, our custom scripting language," adds Humfrey. "But the prose of *Sorcery!* and *80 Days* has gone, replaced by dialogue lines and stage directions. The result is something much more like a film script – the unseen blueprint of the movie. The game is then the director and cinematographer, bringing that script to life."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looked at Monsieur Fogg
... and I could contain myself no longer.
'What is the purpose of our journey, Monsieur?'
'A wager,' he replied.
'A wager!' I returned.
He nodded.
'But surely that is foolishness!'
'A most serious matter then!'
He nodded again.
'But can we win?'
'That is what we will endeavour to find out,' he
'A modest wager, I trust?'
'Twenty thousand pounds,' he replied, quit
I asked nothing further of him then[.], a
polite cough, he offered nothing more to me
'Ah[.'],' I replied, uncertain what I thought.
After that, <>
... but I said nothing[] and <>
we passed the day in silence.
-> END
110 Words, Line 3

## SCRIPT-FIRST

Things become clearer when you give more thought to inkle's 'script-first' approach, which sees the script itself as the core of both game and design process, with everything else being built on that foundation. Just as in Hollywood, here the script is the founding document, inspiring almost everything else that becomes part of what a game is.

"The script-first approach is our core development philosophy," Humfrey elaborates. "We take the story, characters and scenario as a starting point, and develop mechanics out of those. Obviously, there's a back and forth; the most important thing is to be flexible and agile about the holistic design. But we don't add mechanics – however fun – if they fight the narrative or feel out of character."

The player should always be doing what the protagonist is doing, Humfrey explains, and it is as simple as that.

"And script-first is also about our practical methodology," he continues. "Our core technology is ink – our narrative scripting language that forms the spine of the game. It tracks everything that's relevant to the story, including everything that the player has ever done, and it directs the narrative based on their choices."

The advantages to that approach, inkle believes, are manifold. For starters, it assures that any story-driven game really is powered by its script, meaning that to play the game is to play the story. That's what inkle games do best. Equally, subscribing to the script-first methodology can give the production and design process focus and direction – as well as room to evolve organically

"By taking the script as the spine of the game, it ensures that we're never reducing the narrative to make way for anything else," Ingold asserts. "Technical and design compromises are always necessary, and by making sure that the script is strong first, the other design decisions trickle down from there.

"The technical implications are interesting – it's important that we're able to iterate on the script and the level design simultaneously, so it's essential that the interface between the two is both flexible and robust."

That means that, through using ink and a script-first model, inkle can implement technical narrative systems that make conversations that are specific to a location – or re-usable across multiple locations – easily definable. At the same time, camera angles in the game world can be highly-specific, or adaptive to circumstance.

> **By making sure that the script is strong first, the other design decisions trickle down from there.**
> *Jon Ingold, inkle*

## SCRIPTING GAMEPLAY

It is easy to name games without narratives, or where narrative is a trivial concern, but games without gameplay? They largely exist only on the medium's far fringes, where experimental developers push the very definition of what games are.

The script-first method could be argued to be prioritising the wrong thing. 'Gameplay above all else' is a more typical design rule of thumb.

"But when your story is your top priority, and when your genre is adventure games, that mantra needs to be taken apart and rebuilt," says Humfrey. "What constitutes the gameplay, and how do you make sure it's strong?"

He makes a convincing point. When the narrative is your gameplay, using the script as the foundation of a game's design can equate to going gameplay-first.

"It's really hard," Ingold adds. "Games are naturally based around loops and systems and narratives are not - they're based on surprises, mysteries and sudden reveals. So how do you write a narrative which doesn't make the gameplay attached to it feel arbitrary and unfair - or worse still, irrelevant?"

Taking the script-first approach, Ingold suggests, means turning one's back on established game tropes.

"Combat, for instance, can't be un-punishing," Ingold asserts. "Enemies can't be generic; upgrade trees can't be experience-point-based; the list goes on. So – what's left? What gameplay can you make which, when you reflect it directly back into the narrative content, makes sense?"

The answer to that question will ultimately come with the full reveal of inkle's next project. Based on the studio's previous output, there's a bounty of non-traditional, narrative-based gameplay to explore.

If other developers adopt the script-first approach, where tropes of gameplay design are relegated to the subs bench, it might be the perfect storm for innovation in one of the most ancient art forms there is: spinning a good yarn. ■

### inkle

For those at GDC, inkle will be delivering a special session looking at storytelling in games, the script-first methodology, and its new project. Entitled 'Creating Interactive Film Scripts for 3D Adventures with Ink', the talk is part of the Programming and Design tracks. Writers, designers and tech leads may find this session useful, especially if they are interested in bettering their understanding of writing dialog for graphic adventures, and structuring the narrative arc of games.

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# DEFOLD-ER

**Develop** speaks to King's lead engine developer and co-creator of Defold, Ragnar Svensson, about the engine a year on from its free release, and how the differing power of handsets can affect development.

It's been a year since the Defold engine was released for free at last year's GDC. Ragnar Svensson and Christian Murray had developed the engine, which developer King acquired in 2014, for over ten years. Whilst King has been using it, and Svensson also joined the company as lead engine developer, the engine has gained in popularity, thanks in part to its free release.

"We wanted to give back to the games community by releasing Defold publicly and do something cool," Svensson says. "Over the past year, we have really enjoyed seeing the indie community taking to the platform and making awesome games on it. For us, it is all about making better games."

Games development is an ever-fluctuating medium. One of king's successes, arguably, has been their games' ability to be played on virtually anything. From the outset, Svensson and Murray both wanted something that helped the engine adapt to service the needs of multiple users with different requirements. That idea is something Defold will be building on throughout 2017.

"I feel player expectations and demands grow faster than what the indie community can keep up with," Svensson says. "With the market now being constantly flooded with new games, developers and companies must do more to make their games better. We want our engine to be open and ready to anybody and anyone willing to employ it for good."

## ENGINE MANAGEMENT

The mobile games market is incredibly successful despite the saturation of handsets and massive disparity between the processing powers of them. When creating an engine primarily for mobile, it becomes essential to make sure what you're creating isn't going to cause problems for the user.

"Over the last few years, the mobile games landscape has changed so much," says Svensson. "Some may say that games have gone through the whole cycle, from small casual arcade games to gorgeous 3D core titles.

"I indeed see many developers working on 2D games now with more casual mechanics. Perhaps devices available in developing markets are influential on other markets.

"Nowadays games must have small memory footprint, instant level loading and be platform agnostic to appeal to the mass audience. We feel that Defold users are in a very good position here."

> **Player expectations and demands grow faster than what the indie community can keep up with**
> *Ragnar Svensson*

Defold is using this need for accessibility and adaptation to be a benefit to all users, according to Svensson. "We maintain bi-weekly release cycles and guarantee backwards compatibility, so there are no issues when the update is pushed. It is important that both King, who may be working on a two-year-old project, and an indie developer who may be working on a two week old project, feel equally comfortable."

"The other side here is that some of engine features may only be relevant for some indie developers and may not be on our top priorities list. This is where the Defold community thrives and these concerns can be raised to the top of our priority list. With this in mind, we have designed an editor and a runtime extensions feature."

## THE GDC COMPETITION

The Defold community is a very big part of what makes the engine so progressive and many games are already available on itch.io and other similar sites in HTML5. It's why Defold are coming to this year's GDC on the back of a big competition.

"We've had an overwhelming response of developers using our platform. We think it's important to recognize these developers by offering them an opportunity to come along to GDC and showcase their game to the industry." ■

# THE NEXT GENERATION

UK developers and publishers continue to support the education and celebration of young games development talent by partnering with the BAFTA Young Game Designers awards

Applications for the 2017 BAFTA Young Game Designers awards are now open. Children in the UK between the ages of 10 and 18 are encouraged to design and develop games, with the winners receiving recognition from industry veterans.

The BAFTA name is known globally and receiving such a prestigious award can be a great boon to anyone looking to enter the games industry later. By validating games as art form and legitimising game development as a career, BAFTA is helping to build a new generation of world-class game designers.

As part of the 2017 awards, the official website has been updated and includes a large selection of learning resources, many of which fit into and support the national curriculum. Teachers and after school club leaders are now armed with worksheets, videos and more to teach the basics of game design and coding.

This includes a card game which helps kids understand the concepts of game design and creation, by randomly generating gameplay concepts around which to build a game. Some entrants can go down the design route and win the 'Game Concept Award', and others more versed in the practicalities of game development can show off their coding chops in an attempt to win the Game Making Award.

The learning resources have sections devoted to playtesting, marketing and working in the industry, giving students an overview of design, but also practical skills and advice that can be taken into a career.

With the grand prize consisting of studio visits to huge UK studio names such as Sony and Criterion inviting the winners to their offices to discuss their game ideas. Winners are also invited to Abertay University in Scotland and Google to learn more about making games. Unity, Jagex, Toon Boom and others will kit the winners out with development tools and hardware.

> **The sheer amount of access YGD gave me was staggering**
> *Dan Pearce*

The winner of the very first Young Game Designers award in 2010, Dan Pearce, has since developed three games which he has released commercially, Castles In The Sky, 10 Second Ninja and its follow-up 10 Second Ninja X.

Dan went on to be named a BAFTA Breakthrough Brit in 2013, demonstrating the charity's continued devotion to nurturing UK game development talent.

"BAFTA Young Game Designers has meant everything to me," Pearce says. "It springboarded me into a career that I sincerely love and opened so many doors when I was just getting started in games. The sheer amount of access YGD gave me was staggering."

It may be daunting for young people to enter such a hotly contested competition, but Pearce suggests that anyone with an interest should give it a try. At the very least, you'll walk away with experience in designing and making a game.

"My advice for anyone entering is to not worry about getting every detail in. A polished build of something smart and simple will do far better than a rough version of something cluttered."

Rhianna Hawkins, the 2014 Young Game Designer and first female winner of the competition, went on to study Computer Games Development at university, but recently changed to Teaching English to Speakers of other Languages with Japanese at the University of Central Lancashire. This isn't a step away from games, though. Hawkins sees this as a useful avenue of study for her career in the industry. "I recently switched courses as I noticed a trend in the games I wanted to make involved languages, including games that help with learning languages," Hawkins says.

BAFTA's Event Producer for the Young Game Designers, Melissa Phillips, is seeing encouraging growth for the competition.

"Every year we see a rise in interest in the competition and our judges are consistently surprised at the high standard of games and designs being entered," she says. "Jurors have been known to exclaim 'This could be taken to a studio tomorrow morning and could be next year's best selling game!'

"We also see a lot of games that tackle very some serious topics, introducing characters or gameplay that incorporate physical disabilities, mental health and sexuality. I think it's fantastic that our young game designers are aware of how games can help bring these topics into wider discussion.

"There is a sense that these issues are being embraced by a younger generation; there is a feeling of care and level of tact in which they approach these themes that is incredibly adult and conscientious. It gives me a huge sense of hope for the future of the UK games industry ■

# CONTROLLING

**Sean Cleaver** spoke to Creative Assembly's Alistair Hope about Halo Wars 2's new game modes and the reasoning behind keeping the original game's control scheme

Back in 2009, about a year before Bungie departed the *Halo* franchise, the series returned to its early development roots in the form of *Halo Wars*. Bungie created a game called *Myth: The Fallen Lords*, which was a real-time strategy game that gathered quite a following back in 1997. Initially, Bungie's plan was to model *Halo* on this RTS format, eventually changing its mind in 2001 to create the trailblazing first person shooter we know and love.

Fast-forward eight years and a successful trilogy later, Microsoft and Ensemble Studios released *Halo Wars*. It was, in fact, the last game made by the *Age of Empires* developer and a lot of work went in to researching how to create RTS games for console. "We actually spent a whole year just trying to reconstruct how the controls would work on an RTS game," said Ensemble's CEO Tony Goodman on a 2008 job listing.

Fast forward another eight years and *Halo*'s new guardians, 343 Industries, along with strategy giants Creative Assembly, announce *Halo Wars 2*. Unlike the now defunct Ensemble Studios, Creative Assembly has enjoyed a good amount of success developing games for consoles, such as *Alien Isolation*, and have vast experience in creating real time strategy games. Creative Assembly have made many additions to the *Halo Wars* formula to make the sequel its own, but the controls from Ensemble's work have barely been touched. They remain the best control method for the *Halo Wars* series.

> **Balance within an RTS is extraordinarily important.**
> *Alistair Hope, Creative Assembly*

"There's elements within *Halo Wars* that are kind of signature to what it is perceived to be and we wanted to stay true to some of those things. But also evolve it," says Alistair Hope, creative director on the game. "If you're familiar with *Halo Wars* then it's great because it's similar, but different. We've expanded upon it and brought new features to the game, but whichever platform you're playing on, our intention was that the core experience was identical.

"We've taken *Halo Wars* around the world to shows and we have players of all kinds of background and experience levels who seem to pick it up and have a good time. Our intention with *Halo Wars 2* was to make an RTS for everybody and we've done a lot of work to support that."

## SPARTAN IN THE DECK

Differences to Ensemble's original vision come in the form of various new game modes being introduced by Creative

# THE BATTLE

Assembly. A large part of the developer's 'making an RTS for everyone' mantra, according to Hope.

The new Blitz mode was developed in an attempt to reach this goal. It sees users build a deck of units from card packs earned during game levelling and in-game transactions. With these cards you can build an army to summon within the level, at the cost of valuable resources which varies depending on the unit's strength.

"Blitz came about by trying to create something that could appeal to a new audience," says Hope, "to be super accessible but also really, really deep. I think it's exciting that we've found some new ideas. I think we'd like to make games that really promote players' creativity and imagination and reward that. With Blitz, that's a good example of that because it's quite straightforward.

"How you comprise that deck through the cards and really influence the play style of the options you have, seeing people create some really unique imaginative decks and then combine that with a teammate. You can get some really interesting contrasting and complimentary scenarios, where decks are really working together to support each other in unexpected ways.

"That's absolutely one of the strengths of strategy games – giving the player the tools with which to be creative and imaginative."

## BALANCING ACT

Balancing that kind of gameplay is always tricky, but it's something that Creative Assembly hopes helps *Halo Wars 2* move apart from its predecessor. The intuitive controls of *Halo Wars* were great, but at times the game felt like a resource-based race to the prize. In *Halo Wars 2*, especially with it's new game modes, Creative Assembly is keen to make the games balanced and fun.

"We have these co-operative and competitive modes in multiplayer," says Hope. "Something like Stronghold is a really super successful mode. Kind of arcade, instant fun. Decide your favourite units and go and have a battle. Then we have Domination and Deathmatch, which are kind of the truer test of RTS skills. All the breaks are off, long term strategy, understanding what your opponent is doing.

"Balance within an RTS is extraordinarily important and is something we continue to work on. It's a game about systems and we'd like to think Creative Assembly have some experience in creating those systems. So yes it's a vital part component of the games." ■

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# VISUAL ARTS

**POPCORNFX**
How Persistant Studios' middleware stays relevant as tech improves
**P57**

**HDR WHO?**
What is HDR and how will it affected game development in 2017?
**P58**

They say that first impressions are the most important and, when it comes to your game, the first thing players are going to see are the work of artists. As an industry we are hard-wired to want to improve the graphical fidelity of our games. More polygons, better textures and deeper colour palettes.

Gamers are magpies. And that's okay because our favourite shiny, pretty things just keep getting shinier and prettier, thanks to the ever increasing power of games consoles and PCs.

Games artists are bringing worlds to life and, in the case of VR, blurring the line between the real world and the very not real world.

In this section of the mag, we'll look at how Persistant Studios keeps its VFX middleware software up to scratch in a world of increasingly speedy tecnological progress. Sean also delves into the concept of HDR and how developers are taking advantage of it for their games.

We've apicked some great visual arts presentations for GDC attendees to check out during the show, too. Take a look. ■

**Animation Bootcamp: Uncharted 4: Workflow and Prototyping**
- **Jeremy Yates | Lead Animator, Naughty Dog**
- **Almudena Soria | Lead Animator, Naughty Dog**

This presentation uncovers the methodologies used by Naughty Dog to bring the characters of *Uncharted* to life. This talk will delve into the unique culture of Naughty Dog as well as uncover the animation pipeline from concept to console, including previs, their motion capture process, achieving seamless transitions, tracking assets, and communicating feedback. Prototypes from *Uncharted 4* will be showcased.

**Art Direction of Street Fighter V: The Role of Art in Fighting Games**
- **Toshiyuki Kamei | Art Director, Capcom Co., Ltd.**

Capcom has been creating fighting games for 30 years. 30 years of experience has influenced the art of game creation, and vice versa, art has influenced the structure of the game. Capcom has game creation techniques that can only be learned from documents and mentors within the company. In this session, Toshiyuki will introduce Capcom's techniques of art creation in its development of fighting games and discuss how the art has played a role in the overall game structure.

**Creating Compelling Characters: A Panel of Character Concept Artists**
- **Justin Thavirat | Sr Art Dept Supervisor, Blizzard Entertainment**
- **Richard Lyons | Concept Artist, Naughty Dog**
- **Laurel Austin | Principal Artist, Blizzard Entertainment**
- **Claire Hummel | Art Director, Campo Santo**

Creating compelling, memorable characters can be critical. In this panel, four designers and concept artists from diverse development backgrounds will share some of their philosophies and ideas on how to create compelling characters from four very different perspectives. ▶

2017

GDC

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Join Epic Games for Unreal Engine's most newsworthy hour of GDC 2017.
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Last year at GDC, Epic demonstrated how to build VR in VR using Unreal Engine, and released the VR Editor at the show. Ninja Theory and Epic introduced real-time cinematography, in which a live human-driven performance based on *Hellblade: Senua's Sacrifice* was captured onstage and cut into a movie using Sequencer, Unreal's built-in cinematic and storytelling tool. McLaren, Nickelodeon, Disney, NASA and others presented how Unreal opens up new opportunities in visualization, animated entertainment, live attractions, training and more.

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# PUSHING THE BOUNDARIES

**Sean Cleaver** speaks to Persistant Studios CTO, Maxime Dumas, about how middleware is constantly adapting to serve the increasing demands of graphical improvement

As we rush towards higher resolutions, higher fidelity and more colourful displays, the technology to create these experiences must also adapt. One of the middleware providers that has been adapting is Persistant Studios and their PopcornFX middleware.

The software has now been used across many different mediums and offers integration in to both Unreal and Unity, which makes it an attractive solution.

We spoke with Maxime Dumas, CTO of Persistant Studios to find out a bit more on how middleware has evolved over time to reflect the demands of the users and the ability of the technology they are using.

"Production needs for the gaming and movie industry pushed the evolution of the technology these last 10 years," says Dumas. "Publishers are making live action & feature films and Directors want more photorealism intermixed with the fantastical in their big productions; live action, animation, TV series [like] *Assassin's Creed* and *Warcraft*. So production pipelines are changing a lot, developing more and more convergence in between gaming, film, and VR tools."

As gaming changes and evolves, new challenges come to middleware providers. Whilst more is happening and the costs to production can take away from a project's budget, it is the access to the technologies and engines that are helping to grow the audience and the tools.

"Game engine developers continue to push boundaries in terms of realtime rendering," says Dumas. "New rendering technologies like PBR, realtime GI, volumetric rendering or middleware's such as Substance Painter/Designer help game companies fulfil their artistic directions. VR introduces new performance constraints.

> **In our philosophy it is not our tool, but the communities tool**
> *Maxime Dumas, CTO, Persistant Studios*

"Middleware must continuously adapt, now quicker than ever before: new platforms with mobile gaming are ramping up, bringing new usages with VR, a new audience is appearing with the democratisation of game development (Unity, Unreal, Lumberyard), accelerating the pace for new versions and the need for accessibility. The community is also a key factor for success."

Staying up to date with your middleware is also key for helping the developers get the best out of the tools they are using. "Taking our Unity and UE4 integrations as example, we have to remain up to date with new engine features and breaking changes to avoid feature regressions. This happened in the past with Unreal Engine 4.5's major rendering breaking changes which had us refactor a good amount of rendering code."

The community feedback is a very key component for PopcornFX and is a big part of making sure it does exactly what it needs to do for its users, especially in a time where the goalposts are constantly shifting. On approaching future updates, Dumas tells me, "those decisions are mainly based on users suggestions, and we also use a public trello board where users can vote for features they would like to see the most. We are close to our users, sending a weekly tutorial and Q&A so everyone can gives its feedbacks and we can answer their needs regularly. In our philosophy it is not our tool, but the tech and FX communities tool made for their creative projects and productions."

PopcornFX has become a versatile middlewear option. Last year, it was used for Kylotonn's *WRC* games, Sony London Studio's *VR Worlds* and survival game *Trove*. "It mainly helped prove that PopcornFX is art direction independent, and can give confidence to users initially unsure about whether our solution can be used to achieve certain types of effects.

"This also gave us opportunities to deeply improve the workflow over different types and shapes of productions, working with talented individuals and teams all over the world." ■

# DESIGNING FOR HDR

**Sean Cleaver** speaks to Playground Games and The Coalition about designing a game for HDR.

From a consumer point of view, this can all be a bit confusing. What is HDR? What are the different standards? What does it mean when I look to buy a new TV? For gaming development though, it is something that really helps to make everything much more colourful and, potentially much more interesting, even more so than developing for 4K.

Both Sony and Microsoft now offer HDR gaming on their devices for compatible televisions but Microsoft's Xbox One S was the first to really promote the technology for the console market, and had a line up of exclusive games designed to take advantage of it. Those games were Playground Games' *Forza Horizon 3* and The Coalition's *Gear of War 4*.

Whilst we may think, especially from the outside, that HDR is a relatively new concept and at the upper end of television hardware, both studios have been utilising the technology for quite a while. "We've were already using an HDR render pipeline on previous games, says Jamie Wood, lead lighting artist at Playground Games. "Being able to output to HDR displays in *Forza Horizon 3* was something new though. Our content was largely already suited to this, as we had taken great care in production to ensure there was a physically based hierarchy between all of our content. This includes light sources, emissive textures, cast dynamic light, the stars, the moon, sunlight and shadow. All of this content has to be balanced in order to look right when you start revealing brighter elements on HDR displays. A new calibration screen allowed us to determine the max Nits of the player's display and fit the larger range of displayed luminance comfortably onto a given TV's capabilities."

This is also the case at The Coalition as studio technical director, Mike Rayner, explains. "The majority of modern AAA game engines have full HDR rendering pipelines and *Gears of War 4* is no exception. From a development standpoint, we were already well positioned to add support for HDR.

"The biggest difference to our development was reviewing the game in HDR with the lighting, visual effects and UI team.

"This helped us to ensure our brightness ranges were tuned and content was calibrated to correctly leverage the full HDR range and achieve the creative vision we had for the game."

## STARTING UP

For studios looking to use HDR in future projects, there are invariably questions about how much extra work, and cost, it takes to produce HDR quality. "It doesn't have to be a huge amount of work if you're already using HDR rendering and PBR," says Wood. "There will usually be a bit of content balancing and as mentioned before you need to work out how you are going to tonemap and output for HDR displays. The other part of standards like UHD to consider is the wider colour gamut."

"Once we added the HDR output path, everything – for the most part – just worked," adds Rayner. "We added HDR fairly late into the development process, however, since our engine is internally HDR and correctly calibrated, we did not have to re-touch a lot of art."

One of the things with creating games with HDR support is that it isn't just an add-on feature for a game. It normally needs addressing very early on in the process. "When you start to break down how to create compelling HDR images on a screen it's a complicated task," Wood explains. "Part technical, part artistic, part psychology. You need to be very careful about how you author and review work. The human eye adapts to changing light conditions, and how we perceive images can change dramatically depending on viewing conditions. This is particularly tricky with HDR as it's quite a new technology and TV displays can vary quite dramatically – it's harder to control the experience that our audience will have. We're not even able to reproduce the full rec2020 colour space on any commercially available displays yet."

> **We want to transport the player into an immersive experience**
> *Jamie Wood, Playground Games*

Claude Marais, The Coalition's Xbox graphics engineer, also points out the display variance issues. "The biggest problem we ran into was seeing banding in the darks for UI and loading screens," Marais explains. "HDR TVs can not only show more details in the brights, but also in the darks. 8-bit content created on SDR displays might have banding artefacts in the very dark areas, but you simply cannot see it on a SDR TV/monitor, on HDR TV you can. We had to add a small contrast adjustment to hide these artefacts. This isn't a problem with the scene rendering, that's floating point or 10-bit."

## LLUMINATING RESULTS

However there were benefits to using HDR in creating a game's lighting, with very little extra work required. "We actually found that things like Bloom and God Rays translate well into HDR without any rework," says Wood. "Global illumination falls under the category of something that should be well balanced for SDR output or HDR so there's nothing additional we had to do there. For skies – like anything else you will perceive more of the bright saturated values of the HDR sky image when viewed on an HDR display."

Colin Penty is the CG supervisor at The Coalition. "Skyboxes were definitely a big focus point," he explains. "You almost always want the sun to be the brightest thing in the world and that wasn't always the case until we re-calibrated in HDR. Global illumination and crepuscular rays mostly just worked in the HDR space. Specific to the bottom end of the global illumination, we had to determine what that should look like in HDR and how to make it visible in HDR space. This was mostly a rendering-focused effort and less about content."

As always with any kind of video game design, careful planning is important, as is research. "The other big content change that benefited our HDR support was our new HDR time-lapse sky technology," says Wood. "We took the time to go to out to Australia (where *Forza Horizon 3* is set) and capture full 24 hour HDR time-lapse skies, capturing the entire dynamic range of the sun and sky over the course of the whole summer. This meant we could then project these

skies in-game and bring a real sense of the true Australian lighting to our players, in full high dynamic range. We went to great lengths to capture our own sky content for the ambitious HDR time-lapse sky system in *Forza Horizon 3*, which meant we had full control over the quality and consistency."

All of this of course helps the workflow although as Wood explains, it isn't really anything out of the ordinary. "I would certainly recommend taking HDR bracketed reference photography. But I probably would have done regardless of HDR output. Getting those all-important hierarchies of lighting values correct is aided greatly by having multiple exposures in reference images. It's hard to tell from a single exposure or a video just how much brighter a stadium floodlight is vs. a streetlight. The HDR reference allows you to get a sense of how your game camera exposure should impact the scene."

Of course when you are making a game and you decide to create HDR visuals, the benefit has to go to one person, and one person alone – the player. "For us, we offer realistic visuals and HDR is just one of a number of tools to enhance that realism," says Wood. "We want to transport the player into an immersive experience and, when done right, richer colours and larger contrast ratios closer to what you find outside in the real world will help to create those convincing realistic visuals."

The Coalition's Marais agrees. "HDR preserves details in the darkest and brightest areas of a picture that are lost using current standards so, for example, metals look more metallic. But more than that, it can also make the player have a more immersive experience. A good example is bright flashes from explosions – sudden bright flashes can cause a physical response where your eyes squint, you get startled, more adrenaline pumps through your body. Together with great audio effects, it can make you feel more like you're actually in battle." ■

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WED. MARCH 1 – 12:30-1:30 PM – MOSCONE WEST 3007

## Mobile: The Future of VR

Joint with Samsung Electronics, Samsung R&D

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WED. MARCH 1 – 2:00-3:00 PM – MOSCONE WEST 3022

## The Future of Real-Time Lighting: Panel Discussion

Panelists representing Square Enix, Naughty Dog, Bioware, Ready at Dawn, Frostbite / EA, ARM / Enlighten. Moderator - Sean Cleaver, Deputy Editor at Develop

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WED. MARCH 1 – 3:30-4:30 PM – MOSCONE WEST 3022

## High Quality Mobile VR with Unreal Engine and Oculus

Joint with Epic Games and Oculus

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WED. MARCH 1 – 5:00-6:00 PM – MOSCONE WEST 3007

## Achieving Console Quality Games on Mobile with Digital Legends case study

Joint with Digital Legends

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THUR. MARCH 2 – 10:00-11:00 AM – MOSCONE WEST 3022

## Get the most from Vulkan in Unity with practical examples from Infinite dreams

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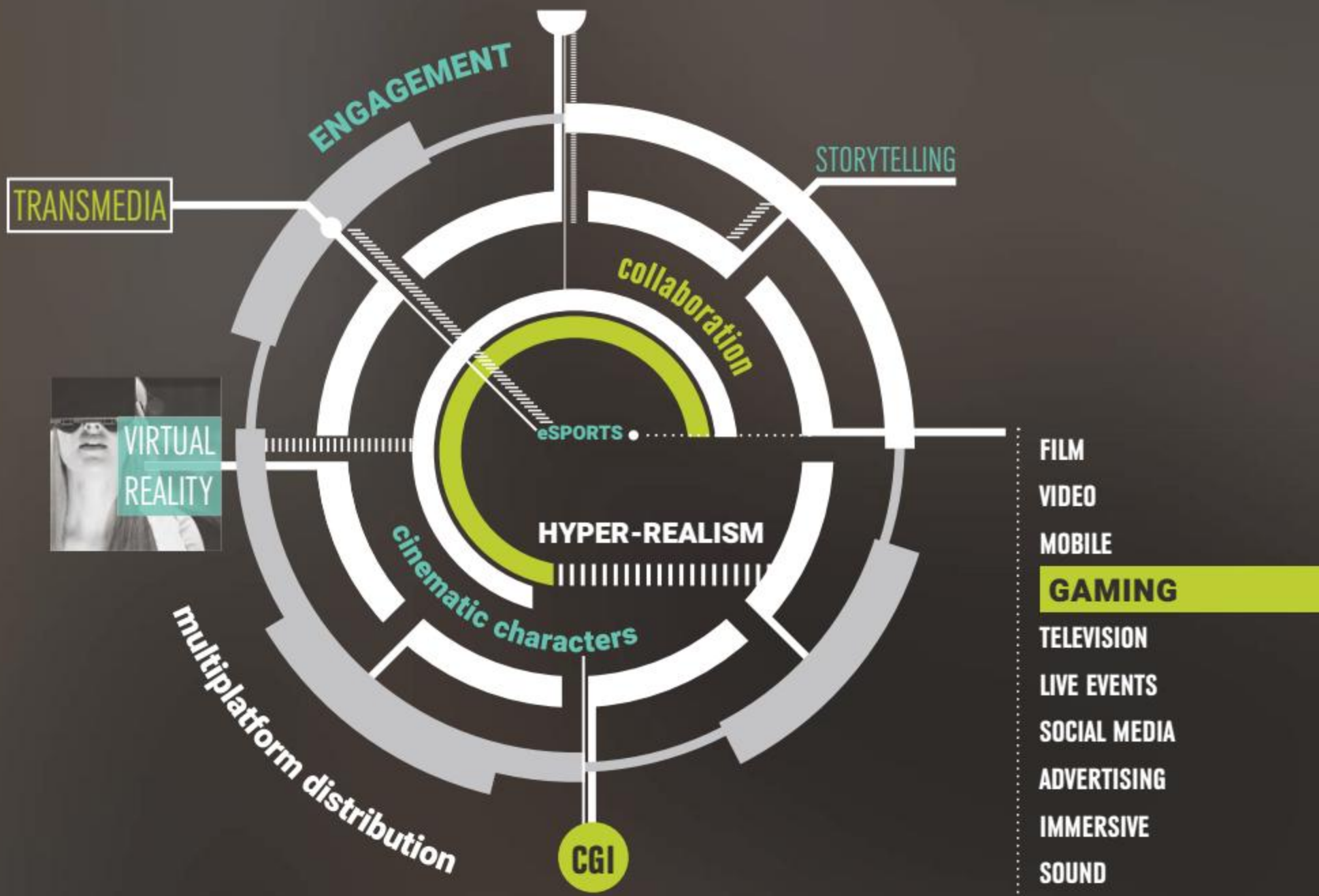


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# jobs

YOUR MONTHLY GUIDE TO THE BEST CAREER OPPORTUNITIES

**MOVERS & SHAKERS**
A bumper batch of new hires for the start of the year
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How this British studio plans to double in size in just 18 months
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What does it take to get a job at Remedy Entertainment?
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# TIME TO SHINE

**Marie Dealessandri** talks to nDreams, Remedy and Creative Assembly about networking and why developers should take time away from the office to attend events and make connections

With GDC 2017 just around the corner, developers have the perfect opportunity to improve their relationships within the industry at hand. Attending events and networking is an essential part of being in the games industry, and even more important if you are looking for new career prospects.

nDreams' CEO Patrick O'Luanaigh knows networking is important more than anyone else – without it, his studio might have never succeeded.

"Back in 2007, I had been running nDreams for a year and I was struggling," he tells Develop. "Everything was much harder than I had expected. I had the opportunity to go up to Edinburgh to a game conference to meet people and network. It was cold, I was tired and I thought it would probably be a waste of time. I was close to saying no. But I didn't. I went. At that conference I saw a talk about PlayStation Home and consequently had a meeting – with Sony – that directly ended up with us getting a huge deal and propelling our company forwards. If I hadn't attended the conference, there is a good chance that our 50-strong development studio wouldn't exist today. In my view, networking is always worth it. By networking, you're creating opportunities for fate to push you in exciting directions. If you don't network, you're missing those opportunities."

Even if you don't end up signing the deal of your life, events such as GDC are also the occasion to see your own achievements from another perspective and go back to work with fresh inspiration and new skills, graphics programmer at Creative Assembly Andrea Sansottera reckons.

> **By networking, you're creating opportunities for fate to push you in exciting directions**
> *Patrick O'Luanaigh, nDreams*

"Events are great for staying up to date with new techniques and here at Creative Assembly we value every chance we get to speak to young talent, motivating them to pursue a career in games. I remember reading interesting GDC presentations covering topics such HDR or deferred rendering and being inspired to one day become a games developer."

He continues: "Events like GDC offer a great opportunity to reflect on what we've achieved, and this year we'll be presenting our *Halo Wars 2* optimization work. At GDC we not only share our experiences, but also learn from other developers who went through similar challenges."

Remedy's head of communications Thomas Puha adds that it's never too late to learn something new and gives an essential tip:

"While it's old school, always, always have business cards with you so you can leave something of yourself to whoever you talked to. It amazes me how many people neglect this.

"In general, despite Skype, Slack and email and all these communication tools, nothing beats talking face to face with other developers in the industry. It's inspirational to hear other stories, but it's also educational. You can always learn something new and that's what's kept me going in the games industry for the past 20 years. Unlike many other industries, in ours you can go talk to people whose games you admire and pick their brains on how they did things." ■

# MOVERS AND SHAKERS

The latest high-profile hires and promotions

## TEAM17

The Worms developer has strengthened its US and UK teams and announced nine new hires.

In the UK, MATT BENSON has joined as business development manager while STE STANLEY (not pictured) has taken over the role of marketing and sales coordinator.

Meanwhile, IAN PICKLES has been hired as senior producer on external partner projects and part of the Games Label product evaluation team.

ELLIE SPANOVIC has been appointed community manager.

Team17's Wakefield studio has also hired DAVIDE FABRIZZI as concept artist, NIKLAS HANSSON as lead programmer and OCTAVIA VASILESCU as lead QA.

On the other side on the pond JUSTIN BERENBAUM has also joined as head of publishing and business development for Asia and the Americas.

CEO DEBBIE BESTWICK commented: "After a very impressive 2016 which again saw a record year financially, we are delighted to be able to welcome our new teamsters to Team17."

## SONY

Former Sony Interactive Entertainment Europe executive vice president SIMON RUTTER is now COO. He joined Sony back in 1997 as brand manager.

Meanwhile, TIM STOKES has become senior VP sales, commercial and operations, after spending five years as vice president, sales and commercial planning.

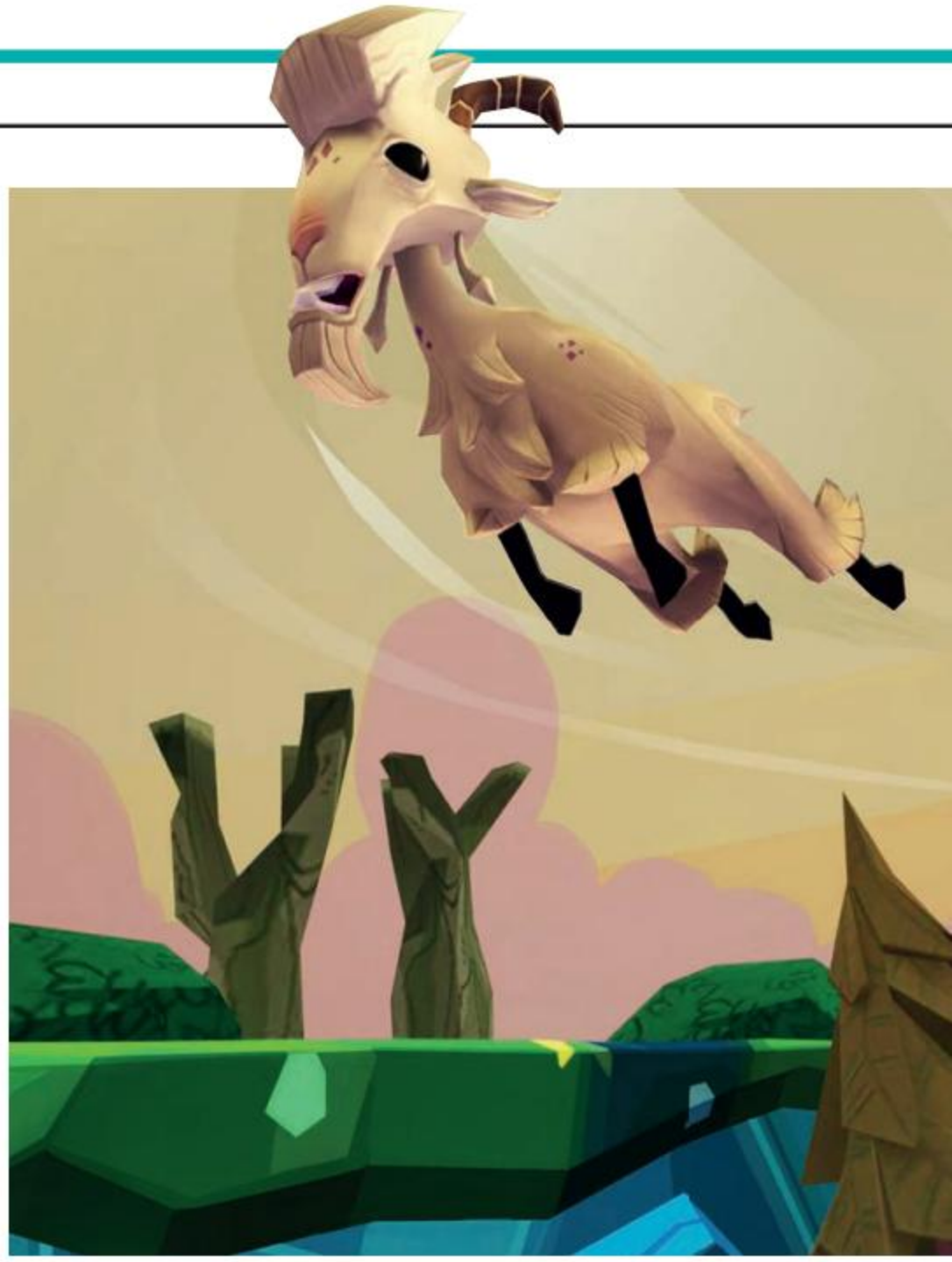
President of SIEE JIM RYAN stated: "I am excited by this new management structure. The talents of both Simon and Tim will help future proof us as we move into the next stage of PlayStation and SIE's evolution."

## ROVIO

Angry Birds developer Rovio has opened a new studio in London and appointed MARK SORRELL to run it. Sorrell joined the Finnish company in 2015 as senior product manager, before being promoted to head of design and then VP product in January 2016. Rovio's new office will work on a new IP and focus on MMOs. Sorrell said: "We believe that the best game experiences are those that you share with other people. So we're starting a studio to do exactly this. We look forward to bringing a diverse team together to deliver unique MMOs that are creative, inclusive and delightful."

## IMPROBABLE

DAN GRILIOPOULOS has joined Improbable as lead content editor. He previously worked as a writer for the likes of Vindit, Proxy Studios and Two Tales and, as a freelance journalist, wrote for various publications including the Guardian, Eurogamer, IGN, Rock, Paper, Shotgun, and much more. He commented: "I'm particularly excited by the potential to create new experiences in games, where devs can use Improbable's SpatialOS platform to build huge, immersive worlds and give players' actions real meaning."



**Marie Dealessandri** talks to HR director Tammy O'Luanaigh and VP of development Tom Gillo about nDreams' growth and projects

As the virtual reality market expands, so too is nDreams. The Farnborough studio, which is behind virtual worlds such as SkyDIEving, Gunner, Perfect, Danger Goat and The Assembly, has seen substantial growth since it decided to focus on VR in 2013.

"The last 24 months have seen enormous change in terms of recruitment at nDreams," says HR director Tammy O'Luanaigh, "We have transitioned from an almost total reliance on agencies to 95 per cent of permanent staff being recruited by us."

VP of development Tom Gillo adds: "We're growing steadily and anticipate that our development team will double in size over the next 12 to 18 months. To some extent that'll be dictated by how quickly the VR market expands, but also by the opportunities that are presented to us from external parties which there have been many. In general though we'll grow in direct proportion to the size of the serviceable market."

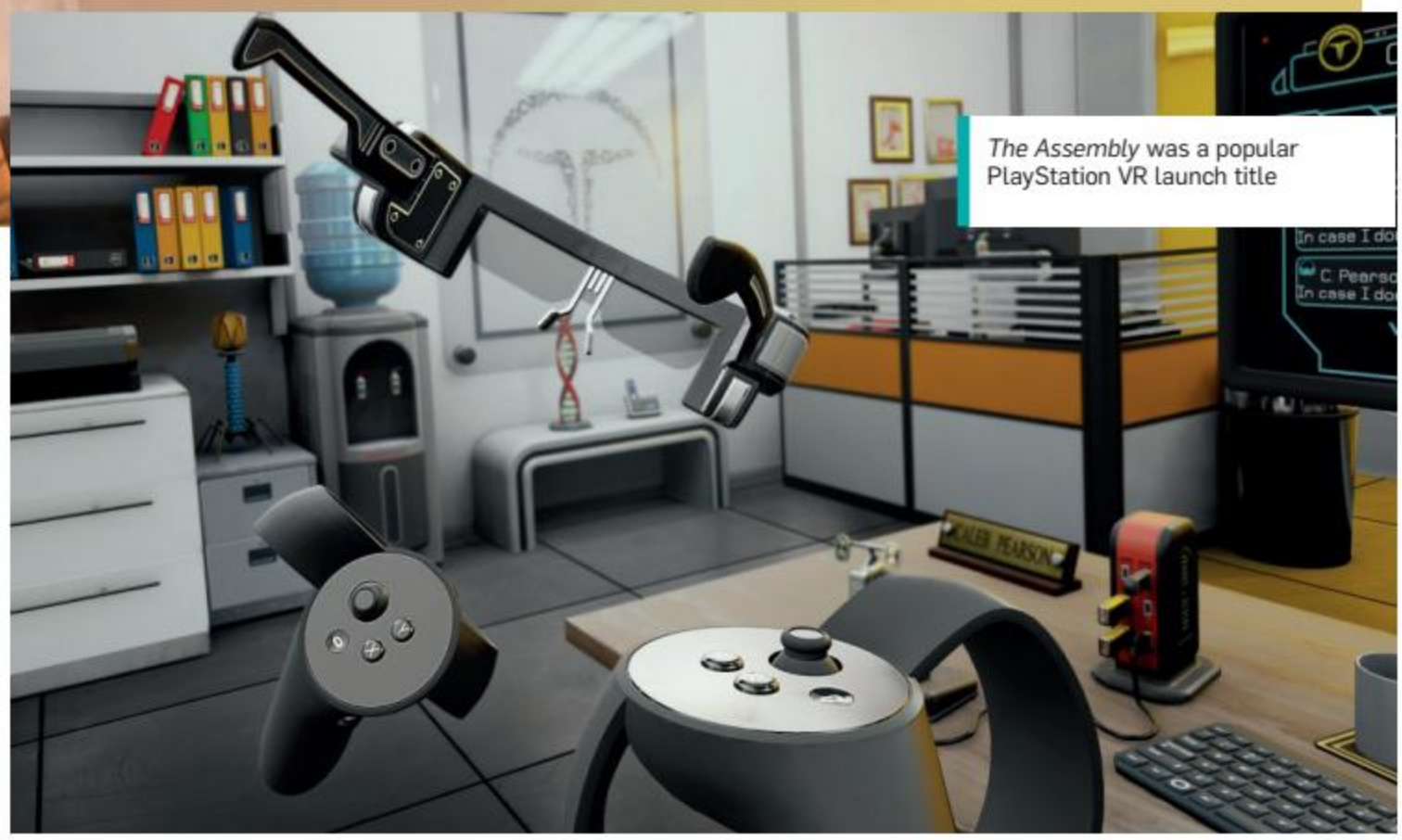
Needless to say, nDreams' future seems bright then, since VR is just at the beginning of its possibilities in terms of market size. O'Luanaigh confirms that nDreams currently "continues to develop multiple unannounced projects," all VR-related, which is a quite unique offering within the UK dev industry.

"We're 100 per cent focused on VR development and to the best of our

> **We're 100 per cent focused on VR development**
>
> *Tom Gillo, nDreams*

# NDREAMS:

## "Our development team will double in size over the next 12 to 18 months"



*The Assembly* was a popular PlayStation VR launch title

knowledge there aren't any other studios that are entirely committed solely to VR," Gillo enthuses. "The benefit that comes with that commitment is shared learning and domain knowledge expertise. We develop for both high-end and mobile VR platforms, giving us an holistic view of the VR market and best practices."

### AN EMERGING SPACE

nDreams thus represents a good career opportunity for aspiring devs – and the studio is currently on the hunt for new talent, from programmers to artists.

"Anyone applying for a position at nDreams needs to make their CV show their personality and character and, most importantly, their passion for VR," O'Luanaigh says. "We receive a lot of applications which clearly aren't tailored to us and they are effectively just a list of products they have worked on. What was your part on it? How did you make it better? What can you bring to our studio to help us continue to move forward in this emerging space?

"Working in an environment of emerging tech can mean lots of changing requirements and evolving parameters. So if you want a clearly defined three year project – doing the same thing every day – we probably aren't a good fit," O'Luanaigh warns.

"If you have been invited to interview, it means we like what we see on paper. Show us your personality and let us see how you can add to our existing teams. Give us clear, and relevant, examples of your work."

### COMMITTED TO VR

For those lucky enough to join nDreams, the company promotes a healthy balance between work and outside interests, O'Luanaigh says.

"We offer flexible working around core hours, duvet days and childcare vouchers to fit in with family and other commitments. Financially, we offer a good pensions scheme, share options, and competitive salaries. We have a very relaxed, friendly and open culture."

But the most important perk available at the studio is, of course, being able to work on VR titles with the support of a reliable structure.

"I'd agree that in the early days of VR, smaller-scale self-published titles was a good bet but as the water-level of consumer expectations rise it'll become increasingly challenging to meet those expectations," Gillo believes. "Being part of a slightly larger, but still independent studio gives you the best of both worlds – the opportunity to make a significant contribution and flourish whilst learning from a team and studio that's 100 per cent committed to VR." ■

# GET THAT **JOB**

**This month:** Design director with Creative Assembly's **Charlie Bewsher**

**What is your job role?**
I'm the design director on the *Halo Wars* team.

**What qualifications and/or experience do you need?**
I have a product design degree. I've found that having a solid grounding in design, with its focus on the user and its structured processes, to be extremely useful in games development. Nowadays most people come via some form of games course and, while these can develop very applicable skills, other perspectives from different specialisms are also very important. What I always want to see is that innate passion for game creation - candidates who'll be creating games whether they're in the industry or not, just because their desire to create engaging experiences is so strong. We want candidates to demonstrate that they have that desire, they can identify what's fun for the user, that they can finish something and can communicate clearly their ideas, working well in a quality-driven team.

> **That passion for making games is essential, alongside the talent to create engaging content**
> *Charlie Bewsher*
> *Creative Assembly*

**How would someone come to be in your position?**
I started as a junior artist 20 years ago and then moved into the design field, making levels and then becoming more senior. You ensure you always work hard to deliver your work to a high standard, learn quickly from mistakes and learn how to get the best from people. Importantly, always take as much responsibility as you can. Take every opportunity to do the best you can. At Creative Assembly, there are so many talented people that there is always an opportunity to learn and develop new skills.

**If you were interviewing someone, what would you look for?**
That passion for making games is essential, alongside the talent to create engaging content. We want to see dedication to learning about game design and the drive to always want to improve, being able to critique your own work and to take criticism. We are all working to that one goal of creating the best quality game for our fans, and it's important to understand that and know how to deliver your work to a professional standard.

**What opportunities are there for career progression?**
There are probably about five recognised levels in game design, from associate to director. And design is broad – you can work in content, gameplay, UI, UX, narrative or technical design. We are always looking for talented, passionate people across all of these areas.

**Why choose to follow a career in your field?**
We're essentially designing fun, in games the design elements are challenging, but it's always an enjoyable experience, and a wonderful career to have. 20 years in to my career, and I still count myself as extremely fortunate! ■

# **SKILLS** AND **TRAINING**

**This month:** Senior lecturer Dominique Starr discusses what Falmouth Uni's Games Academy has to offer to aspiring devs

**Overview:** Falmouth's Games Academy offers BA (Hons) Game Development, BA (Hons) Game Art and BSc (Hons) Computing for Games, an online MA in Creative App Development
**Address:** Falmouth University Games Academy
**T:** 01326 370400
**E:** info@falmouth.ac.uk
**W:** www.falmouth.ac.uk

Former Total War game designer Dominique Starr is now senior lecturer of design at Falmouth University's Games Academy, which gives access to two BAs in game development and game art, a BSc in computing for games and an online MA in creative app development that supports game development.

"Our USP is primarily in our strong focus on team game development, creativity and enterprise," Starr says. "Students choose a specialism from art, audio, animation design, programming, computing or writing, bringing those skills to game development teams working along 'indie' lines."

Collaboration and working in teams are keys at Falmouth University, as it is the case in the games development industry.

"Working on games is absolutely centralised. BA game development students collaborate to make games from the day they arrive, joined by students on the BSc computing for games on completion of their first term. From that point on, students work in teams, using Scrum methods, on one game per year, from concept to completion," Starr explains.

"Students on BA game art work intensively on developing foundational skills in their first year of study, joining the development teams half way through their course. Students' contribution to their games and teamwork are graded, and each development team is assigned a product owner with extensive experience as a games professional from our staff. Hands-on development is what drives our approach to games education. We believe that it is only by taking a game through the full development cycle that students will gain the understanding they need to be able to create their own small game studios or to be of immediate use to existing studios."

Falmouth's Games Academy works closely with Cornish game companies such as Antimatter Games, Round Table Games Studio, Burning Arrow and Stormtide. ■

# RECRUITER **HOT** SEAT

Mikaela Öberg-Mattila talks about Remedy's recruitment needs, what it's like to work at the Finnish developer and why you should join the team – spoiler alert, the office has a sauna, that's why

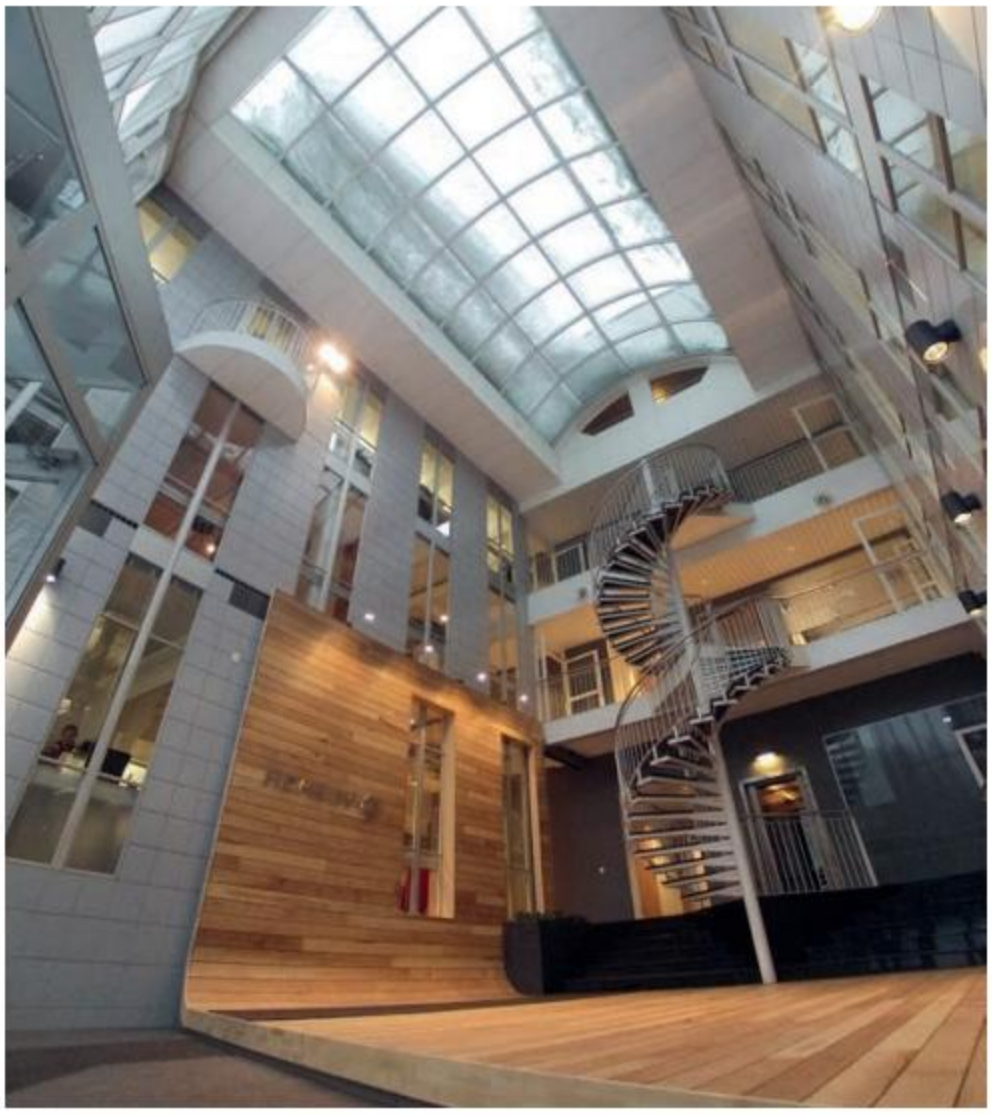
**What differentiates your studio from other developers?**

First of all, Remedy is based in "exotic" Finland and I have to say that it really is not that cold at all here, though it can be pretty dark for the better part of a year. Let's just get the facts out.

Seriously though, we are an independent studio in our 22nd year of making video games. We make cinematic blockbuster action games that break media boundaries and push the envelope of 3D character technology and visual effects.
I do like to think that at Remedy, you can truly have an impact in the games we develop.

**How many staff are you looking to take on?**

Currently we have about ten open positions in various disciplines such as technology, programming, game design and art. We are looking for passionate and talented people who want to work with new, unique and exciting things.



**What perks are available to working at your studio?**

The most important perk is to be able to make unique games and develop our game technology. That is what we love and are passionate about. We are also a very people-oriented studio, and flexibility and work-life balance are very important to us.

We offer private healthcare and dental plans, extensive health and leisure insurance, fully stocked café with free snacks and beverages, annual sports and culture allowance. We have plenty of other recreational events that we do together. We also offer a vacation plan including annual trips to the employees homeland paid by the company.

We offer Finnish lessons (also for the family) and different kinds of activities for people who come from abroad in order to get to know Finland. Our four-floor studio, of course, has a sauna and a bar with a terrace on the fourth floor. We also have a private gym. I swear I have seen some people use it!

**What should aspiring devs do with their CV to get an interview?**

A clear and easy-to read CV is the starting point. We also appreciate a link to a portfolio and/or a list of projects that you have been working on. We are always interested in seeing something tangible you have done.

> **We also have a private gym. I swear I have seen some people use it!**
>
> *Mikaela Öberg-Mattila*

**What advice would you give for a successful interview at your studio?**

It is always good to read and collect as much information regarding us and the projects beforehand, and think of questions that we can answer during the interview. We want to know as much as possible about your previous work, project and experience and also of course gain insight in your competence level. We also conduct a few different tests before or during the interview. We also really like to know what kind of projects have been inspiring to you, what you like to do and what you don't enjoy, in order to know if we can offer what you need to be inspired and motivated.

## CURRENTLY HIRING

**Company:** Remedy
**Location:** Espoo (Finland)
**Hiring:** Ten open vacancies in various disciplines such as technology, programming, game design and art.
**Where to apply:**
www.remedygames.com/careers

**If you have recruited internationally what is the process like?**

We recruit a lot internationally. About 40 per cent of our employees come from abroad and we have about 20 different nationalities at Remedy.

We usually set up the first and second interview by Skype where key team members are present.

The third round is usually an on-site interview, where you get to spend the whole day at our studio, meeting the closest leads, colleagues and other people from the company. We also try to arrange a dinner with a couple of people from the team, in order to really get to know each other.

If you come from far away, we usually try to arrange things so that you get to spend a couple of days in Finland to get to know our country as well. If you would be moving with a family, we also pay for them to come.

**Why should developers join you when indie and self-publishing have become so much more accessible?**

I would say Remedy is a place where you get to work on unique cinematic triple-A scale games and have a significant impact on the end product, as our team sizes are still relatively small. We make games that are globally marketed and get a lot of coverage, so your work will definitely get recognition. Our company is very down-to earth, and gives our people a lot of freedom, but we are over 20-years-old and that gives us stability and professionalism. ■

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# ASK AMIQUS

**Liz Prince,** business manager at recruitment specialist Amiqus, helps solve some of the trickier problems job seekers currently face in the games industry

## Q Dear Amiqus, if it's my first time at GDC and I'm looking to make contacts in the industry, how should I go about it?

Heading to GDC for the first time is an exciting step for any business. There are 27,000 attendees and 500 sessions to choose from, so the possibility for making business connections is almost endless. The sheer scale of the event is a double edged sword – our advice is to accept up front that you can't meet everyone you want to so you're going to need to prioritise and target.

More broadly, travelling to San Francisco costs, not just in terms of flights and hotels, but also your time and energy spent outside of your business. Factor in the prep work before and follow-up afterward, and suddenly a week in California becomes just the tip of the iceberg on your time, finance and energy investment. Maximising the return on your investment takes preparation.

### Who do you want to meet and why?

Networking is all well and good, but if you are running your own studio and funding your own trip, you'll want a detailed breakdown of your 'why' to pull out some objectives from who you meet. Whether you want to attract a publisher, soft-launch a game or shop for new partner relationship, all of these start with making the right industry contacts. Really focus your efforts on who you want to meet, where you are likely to find them and what you want from the meeting. At the same time, be ready with what you are bringing of value to your new contact – it's a two way street, so do your research and be clear what's in it for them.

### Diarise key meetings, but don't over-book

GDC can be overwhelming even for seasoned attendees, so it helps to have key meetings booked before you go. Logistics come in to play here so plan your routes to avoid walking (literally) miles between meeting points. The Moscone Center and the local hotels are typically used for meetings, so download the maps and get your bearings before you arrive. If you haven't met before, be super-clear about how you will identify your target person, especially in a crowd! Bear in mind that one of the benefits of almost the whole industry being in one place is the opportunity for chance meetings, so allow plenty of gaps. Keeping too tight a schedule could prove unfeasible when you're on the ground, especially if someone cancels or you run late. Make sure you have a way to contact someone directly if you need to reschedule.

> **Be ready with what you are bringing of value to your new contact.**

### Make notes and don't be shy

It's unrealistic to expect that you will remember everyone you meet so whether you type in to your iPad, use your camera phone or notate a business card, make notes as soon as the meeting is over to jog your memory. When you get back to the office a little reminder can really help you place them. Don't be shy about introducing yourself to some of the speakers and bigger names in the industry. You'll often find they are generous with their time and can offer real insight in their sphere of expertise if you get them talking.

### Ready your tech for travel

Whatever happens at GDC you will be spending a lot of time on your feet and walking round so travelling light is a key consideration. Some great advice I received was don't wear new shoes! Filter down your devices to the essentials for the floor. If you are demoing a game to new connections, watch out for things that could cramp your style such as a slow Wi-Fi network. It's a good idea to have a back-up options on your device such as videos or screen shots, just in case the wireless network lets you down. Go out each morning fully charged and keep a US adapter on you so you can use any charge-stations while you're out and about.

### Don't just be there, be seen

Don't let the lack of a marketing department stop you getting the message out that you will be at GDC. Content is a key driver in engagement and trust of any brand, and your studio is no exception. The contacts you're making will be much more receptive if they have already 'met' your brand through social-media. Anyone who doesn't know you will Google you, so run a check on what comes up and make sure you have a great online footprint and LinkedIn is up to date.

Social media will help you push your game, connect with your partners and can even attract talented people to come and work for you. Blog, Tweet, Snapchat, Pin or Insta what you're up to, stream to the world on Facebook Live. Get seen by everyone interested in GDC by using the hashtags linked to that event #GDC17. Before you go, follow all your target contacts on Twitter, retweet and like their updates now and again and keep up with what they're posting about the event too. The balance is to avoid stalking, but be interested in what they have to say.

### Get Social

Though the primary focus of GDC is the conference, there are lots of social meet-ups and parties going on throughout the week which are listed on the GDC website under 'Events'. The local hotel bars such as the Hilton, the W and the Intercontinental are also full of delegates so keep your eyes peeled and wear your conference pass all the time for the extra intros. Don't forget to reach out and connect with other studios, too. One must-stop visit is to the UK industry stand hosted by UKIE in the South Hall, booth number 1416, where a number of UK companies will be based. Whoever you meet and whatever your aims, enjoy this fantastic event and we'll see you there! ■

**Liz Prince**, business manager at recruitment specialist Amiqus, helps solve some of the trickier problems job seekers currently face in the games industry

amiqus Visit **amiqus.com** for a fresh perspective on games recruitment

# WELCOME TO 2017 DEVELOP:BRIGHTON

The three-day conference returns to Brighton this July, alongside our very own **Develop Awards**. Here's everything you need to know about this year's leading game dev event

After a very successful 2016 event, enlightened by the presence of development legend Hideo Kojima, **Develop:Brighton** is coming back for an even stronger conference in 2017.

For three days starting Wednesday, July 11th, the very best of the development industry will gather in Brighton to showcase games, attend conferences and network, the highlight of the programme being the **Develop Awards** on the evening of July 12th.

The event will take place at the Hilton Brighton Metropole again this year, with nominations for the Awards opening on Monday, March 13th. The ceremony will celebrate the best and brightest of the development industry, with diverse categories including best visual arts, use of narrative, design and engine, as well as special awards such as Studio of the Year and Development Legend. All the details on how to enter the Awards are available on the event's official website – www.developawards.com.

Last year's event saw the recognition of Hideo Kojima's work and the Metal Gear creator also delivered a keynote alongside PlayStation 4 architect Mark Cerny. **Develop:Brighton** 2017 will include conferences of equivalent quality and some fresh ideas to keep developers inspired.

Practical, **'how-to' sessions** will be organised again in 2017, so that developers can have all the information and knowledge they need to improve their creations. The topics covered in the main conference will be divided into six tracks this year: Art, Business (which will include funding and marketing talks, as well as virtual reality), Coding, Design, Audio and Indie.

**Independent development** is now fully incorporated into the main conference, instead of the Indie Dev Day that was organised last year. Any studio with five or less employees will qualify for a Micro Indie pass, which will be priced competitively.

**Develop:Brighton's Evolve** conference will return in 2017 as well. The one-day session will take place on Tuesday, July 11th this year, and explore everything new and cutting edge in game development. This year's Evolve will have two rooms of concurrent sessions all day.

After being introduced last year, **Meet@Develop** will also return in 2017, as a very useful tool for attendees who wish to network during the event. The website allows visitors to register, contact each other and set up meetings within the Develop Expo. Many events revolving around networking will of course also be organised across the three days of **Develop:Brighton**.

The expo floor is not forgotten this year either, as more free sessions will be planned, such as the **Indie BootCamp**. The latter will be expanded to two days this year, instead of only being one afternoon of free sessions. The Develop Expo floor is free for all visitors so it's the perfect opportunity for students or start-ups to come and learn from the industry.

And last but not least, this year's edition will feature a new, upgraded version of the **Develop Bar** – now fully licensed – so that attendees can network with a drink in their hands without having to leave the expo.

**Develop:Brighton** 2016 was the most successful event since the event launched 12 years ago, with over 2,000 visitors.

Andy Lane, MD of organisers Tandem Events, then commented: "It's fantastic to see the passion of the UK games development community continuing to swell after the successful launch of the last generation of consoles, with attendance up 12 per cent."

All we can hope for is for this year's conference to be as successful as the previous one. ■

## OVERVIEW

**What's Develop:Brighton?**
A three-days game development conference dedicated to bringing the European dev industry together, learning and networking. It also features our very own Develop Awards ceremony.

**Where is Develop:Brighton?**
Obviously in Brighton, more precisely at the Hilton Brighton Metropole.

**When is Develop:Brighton?**
The 2017 edition will take place from July 11th to July 13th, with the Develop Awards on the night of July 12th.

**Can I come to Develop:Brighton?**
Yes, you can. Tickets to attend the conferences are available to buy on the event's website, www.developconference.com. Access to the expo is free of charge. For more on the Develop Awards, since nominations will open on March 13, head to the ceremony's website, www.developawards.com.

11–13 July 2017
Develop:Brighton
Insight:Inspiration:Networking

A year into his role as COO of QA specialist Testronic, Keith Ramsdale talks to **Jem Alexander** about the role of QA in the industry and how the company is gearing up for a VR future

Since joining Testronic as COO a year ago, Keith Ramsdale has sought to restructure the company in an attempt to modernise and improve the service that it provides to clients. Rather than huge sweeping reforms, these updates have involved a gradual evolution of tech and training.

"I have been at Testronic for a year now and together we have made a lot of progressive changes," says Ramsdale. "At the core we continue to have an unyielding commitment to the quality of our services. To innovate in absolutely everything we do, be that within the services we currently deliver, our client relationships, new services we are adding, how we train, develop and build employee careers. When I started we began with the good stuff, a clear vision and mission that everyone can rally behind and a strategy that calls out exactly where we need to focus."

Knowing how to upgrade a business like this requires a depth of experience that Ramsdale's time in the industry comfortably affords him.

"As my grey hair betrays, I have been in this great industry for 25 years," he says. "Much of that time was at EA from when it was a relatively small hobbyist company all the way through to the wide reaching entertainment business it is now.

> **VR and AR will become really compelling media for a mass audience to experience content**
> *Keith Ramsdale, COO, Testronic*

"Typically our clients have stayed with us over a very long period of time across both our games and film divisions. However we weren't set up to attract new clients as well as we could. So we addressed our pricing structure to be truly competitive, as well as our onboarding process. Julian Mower heads our new pre-production department and is focused on preparing a new or existing client for a new project. It's the entry point into Testronic and is designed to make the process very easy for our prospective clients."

In March 2016 Testronic opened a suite of VR testing labs as part of the company's modernisation. These are proving very popular and hopefully bode well for the future of the technology in general.

"Our VR labs are just blocked out with work and we are in the process of re-configuring our Warsaw facility to improve our capacity for VR," Ramsdale says. "There is certainly momentum at least from the amount of projects being developed and completed.

"My personal view is that VR and AR will become really compelling media for a mass audience to experience content. That content will be vastly diverse and it's really exciting. At this point in time I'd say the surface has barely been scratched for how ubiquitous this could become."

Compared to traditional screen-based games, testing VR games is quite a different beast.

"Where VR becomes more interesting is as follows: Player movement and user comfort/experience," says Ramsdale. "These require space and a different consideration to the testing process. User comfort is the area that requires a fundamental change in approach. We spent a full year developing this part of our service and some of it will develop into something we will be able to offer in more traditional game formats."

Interestingly, these require QA testers working on VR to have a different skillset to traditional QA testers. In some respects they need to have fewer skills in order to make sure players of all kinds will have an optimal user experience: "Depending on the brief, these [testers] will likely not be experienced gamers and potentially could be complete novices from a User Experience perspective."

In a world full of open betas and Early Access games, it could be argued that developers are outsourcing their QA directly to the fans. Where does this leave QA specialists? Is there still room for them in the industry? Ramsdale thinks so.

"Early Access/betas and the need for QA are entirely different things," he says. "From my experience, as anyone reading will know, open/closed beta launches go back a long time. The key reasons for these launches were to measure the integrity of the servers and ensure they could stand up to the volume of traffic but also to check that the players were having fun and to evaluate where they congregated. At the launch of these betas the games still had to be tested to be sound, that doesn't go away." ■

# DEVELOPING BEYOND COMPETITION EXPLORES 'TRANSFORMATIONS'

Epic Games talk about their new development competition, in partnership with Wellcome, with the semi-finalists efforts to be shown off at the Develop:Brighton conference this July

Epic Games and Wellcome have invited game developers based in Europe to participate in a new $500,000 year-long development competition entitled Developing Beyond. Using Unreal Engine 4 developers have been challenged to submit compelling, immersive and highly entertaining game ideas based on the theme 'Transformations'.

This is the third collaboration between Epic Games and Wellcome, having previously undertaken the Make Something Unreal Live and The Big Data VR Challenge together.

A high-profile panel of judges, chaired by comedian and broadcaster Susan Calman, will follow the development of projects through the Developing Beyond competition which is designed to provide a sustainable platform for studios to create a minimum viable product (MVP) of their title over the course of the year.

The Developing Beyond competition's theme of 'Transformations' explores any aspect of the human condition – whether across moments or generations, microscopic or global, historical, geographic or indeed contemporary. Populations across the world are constantly changing and with this comes new opportunities, unforeseen journeys and incredible challenges.

The judges are targeting a combination of raw ideas and technical smarts. "Part of the pitch is that we require a team bio, so we're looking to identify teams who are capable of delivering on their proposal and we'll also be looking at their skillsets and experience," said Mike Gamble, European territory manager at Epic.

## A YEAR LONG JOURNEY

On February 20th, 2017 six semi-finalists will be announced. At that time each will receive $15,000 and be paired with a scientist to develop their concept further. In July at Develop:Brighton the progress of the six projects will be judged and three teams will be selected to go through to the final round, each receiving $60,000.

In January 2018, the winning team will be awarded $150,000, second place will be awarded $50,000 and third place will be awarded $30,000 "This is a significant commitment and a great opportunity for studios," said Gamble. "Taking a leap into the unknown on new IP takes courage but can be highly rewarding both creatively and commercially. With Developing Beyond we want to share some of that risk." The full jury, which includes development legend John Romero, will be revealed this month alongside the six semi-finalists.

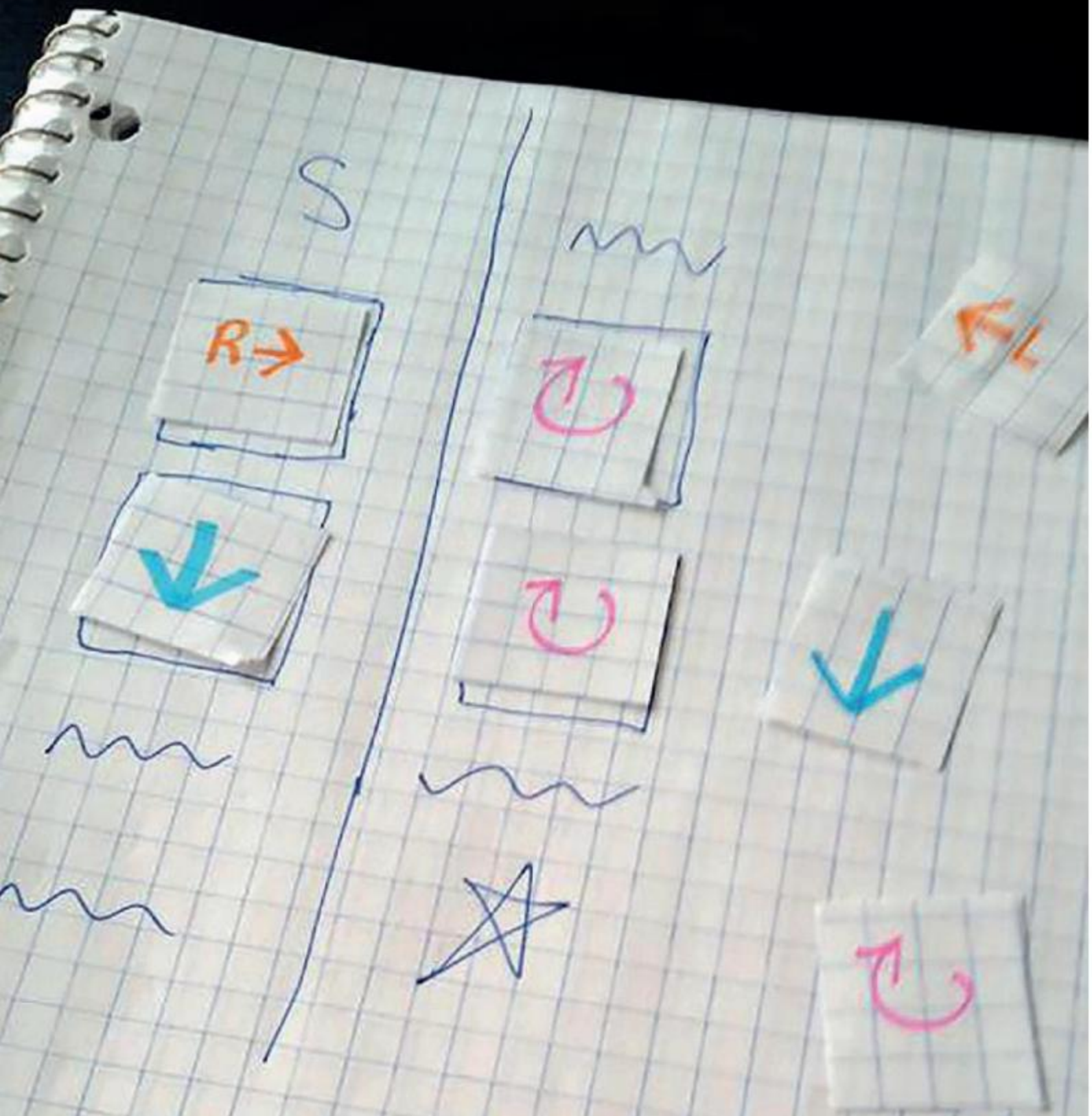
(L-R) Mike Gamble, Susan Calman and Iain Dodgeon

Chair of the judging panel, Susan Calman said: "Games have always been a passion of mine. They entertain and consume you like nothing else. Getting to look inside developers' heads for a year is an absolute dream." Iain Dodgeon, who leads broadcast, games and film initiatives at Wellcome, said: "We're very excited about Developing Beyond, enabling new creative collaborations between the worlds of interactive entertainment and science. We're looking forward to seeing where developers' imaginations take it."

For the winners, Gamble explains the ultimate goal of the competition. "The project stays with them, there is no ownership of the IP outside of the winning studio, and the hope is that they will continue to develop that product and that a game will be commercially available, at some point in 2018 or 2019, as a result of this competition." ■

**developingbeyond.com**

> **Getting to look inside developers' heads for a year is an absolute dream**
> *Susan Calman*



# The develop Post-Mortem

# PONY ISLAND

Forged in the fires of Ludum Dare, Pony Island went on to become a popular Steam release. **Jem Alexander** chats to developer Daniel Mullins about the game's development

Game jams are increasingly spawning smaller game ideas that eventually emerge onto the Steam as full-fledged games. Daniel Mullins' *Pony Island* is one of those games and has seen critical and commercial success after an initial 'prototype' version was created during the global game jam Ludum Dare.

"Ludum Dare is the biggest online game jam," Mullins says. "They give you a theme on the Friday and you have until Sunday night to make it. The theme for this one was 'entire game on one screen' and my idea was to have this game that existed in the options menu of a different game."

How developers interpret the theme, which changes for each jam, is the most fascinating part of the Ludum Dare experience.

With so little time to make a game, pre-planning is a luxury that developers can't afford. Commonly, devs will feel their game out as they go along, with surprise pivots and happy accidents contributing heavily to the final product.

"The first thing I did was make the creepy border screen, which looks kind of grungy and dirty," Mullins explains. "Then I had that jittering red and blue effect behind the white text. I did that in the first hour and that made up so much of the aesthetic of the game.

"It came together in that weekend and somehow both the ponies and Satan just kind of fell into place."

Those put off by *Pony Island*'s kid-friendly name might be surprised to learn of Satan's inclusion in the game.

"I wanted to think of something that sounded innocent that contrasted with the satanic stuff," he says. "It could've been ponies, it could've been dolphins."

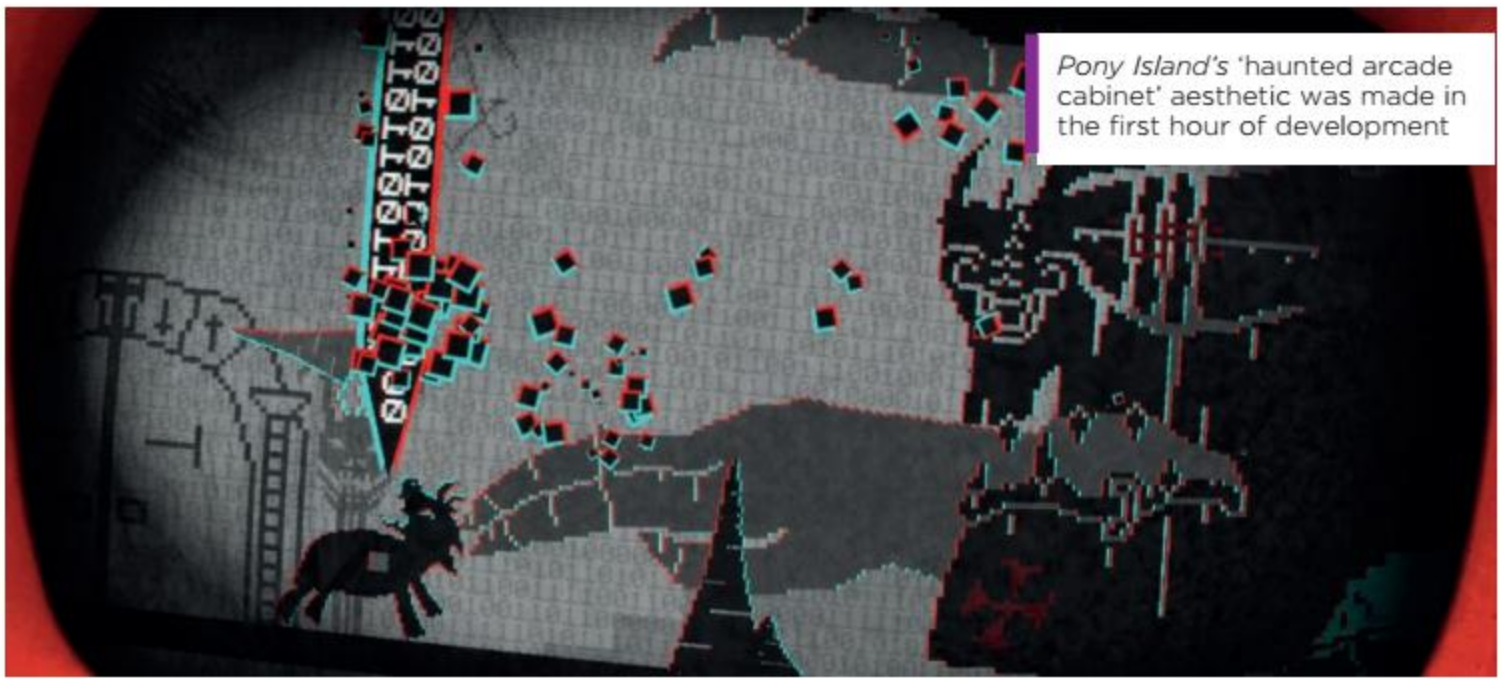
*Dolphin Island* could have been quite a different game, but no doubt the main inspirations would still have shone through.

"I knew that having the satanic stuff would be cool and creepy and I had seen that in the game *Motherlode*, an old browser game," Mullins says. "You have this little ship on Mars and you're drilling down to resources and you come back up and spend them. It's a very basic set-up and it doesn't seem like it has a story, but all of a sudden it hits you that the guy you're drilling for is Satan. Then you drill to the bottom and you fight this mecha Satan."

Once Ludum Dare ended, Mullins

put *Pony Island* to one side and didn't think much of it, until he saw it appear on a round-up of 2014 on Giant Bomb.

"I got mentioned in this article, it was Zoe Quinn's top ten games of 2014. That was exciting! That this little game I made in a weekend got recognised at all. So I decided to put together a trailer based on the game jam project and put it on Greenlight."



*Pony Island's* 'haunted arcade cabinet' aesthetic was made in the first hour of development

## GREENLIGHT

But Steam Greenlight can be a harsh place. *Pony Island* didn't make much of a splash. "I had used it once before," Mullins explains. "It was a failed Kickstarter, but I used the Greenlight process and my experience was the same with both games. I get some comments and views when it's on the front page of Greenlight, which can be encouraging. A lot of people see it. But then it falls off that front page and it's just crickets.

"Both of those games just sat there for months on end, and then both of them at the same time, on the same day, were greenlit for reasons I don't know. So my experience was: you put it on, you wait for six months and magically you get through. I don't know if that's common or not!"

Before *Pony Island* finally got greenlit, Mullins tried to ship it around to publishers. This was tricky, too.

"I talked to a lot of publishers and I think I had two that were interested. One of them flaked out and stopped responding – I had already sent them a demo, talked to them many times. Many emails. Skype calls. And they just flaked out, out of nowhere. That was pretty disappointing."

The other publisher signed *Pony Island*, but that wasn't smooth sailing either. "That went a little bit south too," he explains. "After the game came out they actually went bankrupt and took a lot of developers' money with them. Luckily they only had my revenue from the non-Steam stores. That's a drop in the bucket, compared to the Steam sales. Steam just dominates the market so much."

In order to secure this initial publishing deal, Mullins was asked to create a 30 minute demo of his game.

"That was when I really got serious. They wanted it in a month, so that was the hardest I ever worked on the game. What I came out with after that month was basically the first 30 minutes of the final product. They were impressed enough and said 'okay, we'll do this'."

## GOING PART TIME

At this point the game jam experiment was fast becoming a full blown release. Which meant he would need to devote a lot more time to it. Luckily, the Vancouver game studio he was working at was very helpful.

"I decided to ask if I could work part time at work and they said I could work just two days a week. It meant I could still have some income coming in, but most of my time would be *Pony Island*.

"It wasn't scary because I had a good relationship with this company and I knew that even if *Pony Island* flopped, I could just switch back to full time. A lot of people say 'oh, it's so risky!', but it wasn't a risk. I was really lucky that I had that situation that my work was so flexible. If it's your first indie game, don't quit your job, because that *is* a risk. You might not get it back."

> **I felt like an evil super villain in a laboratory. I was cackling to myself because I knew that it was so convincing.**
>
> *Daniel Mullins*

Development went reasonably smoothly for Mullins. He worked with a couple of friends, one of whom helped during his crunch period for the 30 minute vertical slice, while the other provided music for the game. Otherwise, Mullins was working on his own, which has its own problems.

"You go through cycles," he says. "It seems pretty natural and I've identified it now, where you're feeling really good about it for a week or even two weeks, and then you slowly lose motivation and all of a sudden you're thinking 'what am I even doing with this?'. But then it picks up again and it just seems to cycle around."

Mullins recalls how one of his favourite parts of *Pony Island* was all developed in one single night. "The part that everyone talks about is when that Steam pop up happens. That whole encounter with the Asmodeus character. He's doing all sorts of crazy stuff to your computer. You're hearing facebook notifications and there's a crash of the game. That was mostly all done in one night.

"That was such a fun night, because I knew these tricks that I was coming up with were really convincing. I felt like an evil super villain in a laboratory. I was cackling to myself because I knew that it was so convincing and I knew it was going to trick people. That was the most fun night of the whole development."

That wasn't the only part of the game that was enjoyed by players, however. *Pony Island* currently enjoys an "Overwhelmingly Positive" rating on Steam. Mullins handed out Steam keys to streamers and YouTubers, and enjoyed watching personalities he'd been following for a while playing and enjoying his game.

"The most impactful for me are when people who I've watched and appreciated before the game came out actually took a look at my game. That's kind of surreal. That happened with this YouTuber named Super Bunnyhop. He did a video just for *Pony Island*, which was super exciting. He liked certain parts, but he also criticised certain parts. He compared it to a Doritos taco from Taco Bell, saying that they're both five dollars and you'd be happy with your purchase with both. To be compared to a Doritos taco by him was kind of bittersweet.

PewDiePie also created a video on Pony Island, which ballooned Mullins' expectations of the game.

"I thought 'Oh, I'm going to be a millionaire! PewDiePie's going to play the game!'," he says. "That's obviously in hindsight not how it works. I think his audience back then was a lot younger, so I found that the number of people buying it from his video was quite low compared to those who had way fewer viewers, but a more mature audience. They had a much higher conversion rate."

After all that, the critical and commercial success of *Pony Island* has allowed Mullins to quit his job and work full time on his next game, which he plans to self-publish. Not bad for a prototype made in a weekend. ■

We'll see you at GDC Come and say hello

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Visit us on YouTube for weekly videos showcasing progress, priorities and how the Sea of Thieves team is shaping this fantastical shared world!

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